DRAFT

LIST OF TABLES

Tables are located after each relevant chapter, except where noted otherwise.

Table 1.6-1 Approvals and Permits to Develop the Ona Mine

Table 1.6-2 Approvals and Permits to Construct the Proposed Ona Beneficiation Plant

Table 1.6-3 Approvals and Permits to Implement the Proposed Mining, Waste Disposal, and Reclamation Plans

Table 2.2-1 Estimated Annual Mine Production Rates (Acres, Cubic Yards, Tons)

Table 2.2-2 Mining Areas (Acres) by Alternative

Table 2.2-3 Floridan Aquifer Withdrawals for Phosphate Mining

Table 2.2-4 Project Average Annual and Peak Monthly Groundwater Use Demands for Ona Mine

Table 2.2-5 Average Annual Water Budget

Table 2.2-6 Comparison of Typical NPDES Outflow Values with Horse Creek and Brushy Creek Water Quality Data

Table 2.2-7 Mine Wide Land Use/ Vegetation Cover Summary

Table 2.2-8 Reclamation Schedule

Table 2.2-9 Model Summary of Clay Disposal Plan

Table 2.2-10 Tailings Disposal Schedule

Table 2.5-1 Comparison of Potential Impacts by Alternative (Located in text at page 2-40)

Table 3.2-1 Upland Community Assessments Summary of Species Composition

Table 3.2-2 Wetland Impacts Summary USACE Jurisdictional Areas

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Table 3.3-2 Small Mammal Trapping Species and Numbers Captured

Table 3.3-3 Wading Bird Nesting Sites Identified

Table 3.3-4 Pit Trapping Effort

Table 3.3-5 Phytoplankton Collected From the Mississippi Chemical Corporation Site April 1980

Table 3.3-6 Summary of 1999 Phytoplankton Samples at IMC-Ona

Table 3.3-7 Zooplankton Collected From The Mississippi Chemical Corporation Site April 1980

Table 3.3-8 Benthic Macroinvertebrates Collected From Streams On The Mississippi Chemical Corporation Property April 1980

Table 3.3-9 Summary of 1999 Hester-Dendy Macroinvertebrate Sampling at IMC-Ona

DRAFT

Table 3.3-10 Summary of 1999 Dip Net “20 Sweeps” Macroinvertebrate Sampling at IMC-Ona
Table 3.3-11 Fish Collected in Brushy and Oak Creeks On The Mississippi Chemical Corporation Property in April 1980
Table 3.4-1 Potential for Occurrence of State and Regionally Significant Listed Plant Species on the IMC Company Ona Mine Development of Regional Impact
Table 3.4-2 Listed Wildlife Species Potentially Occurring on the IMC Ona Mine Site
Table 3.4-3 Scrub Jay Call Surveys, Spring and Fall 1998
Table 3.4-4 Listed Wildlife Species Observed on IMC’s Site, Spring, Summer and Fall, 1998
Table 3.5-1 Hydrologic Data for Major Tributaries to the Peace River in Hardee County
Table 3.5-2 Average Annual Water Budget Under Natural Conditions
Table 3.5-3 Runoff Characteristics for Ona Mine Site – Pre-Mining
Table 3.5-4 Results from Stage-Discharge Measurements for Ona Mines
Table 3.5-5 Results of Rainfall Monitoring for Ona Mine (1995-2001)
Table 3.5-6 Flood Level Elevations at Cross Sections on Horse Creek
Table 3.5-7 Flood Level Elevation at Cross Sections on Brushy and Oak Creeks
Table 3.6-1 Comparison Summary of Selected Parameters Along Horse Creek from 1976 through 1981
Table 3.6-2 Summary of Water Quality Data for Horse Creek Near Arcadia 1962-1980
Table 3.6-3 Comparison of Water Quality Data for Horse Creek and selected tributaries for 1993-1995 Monitoring
Table 3.6-4 Comparison of Water Quality Data for Horse Creek for 1998-1999 Monitoring
Table 3.6-5 Comparison Summary of Water Quality Data Along Peace River (1951-1960)
Table 3.6-6 Summary of Site-Specific Water Quality Data collected from 1976-1981
Table 3.6-7 Comparison of Water Quality for Ona Mine for 1998-2001 Monitoring
Table 3.7-1 Groundwater Elevations from Ona Mine in Onsite Well Clusters
Table 3.7-2 Results of Slug Test Conducted in Ona Mine Wells
Table 3.7-3 Summary of Aquifer Characteristics on or Near Ona Mine Site
Table 3.7-4 Statistical Summary of Physical and Chemical Constituents in Surficial Aquifer Water in the Horse Creek Basin, 1993-1995
Table 3.7-5 Summary of Groundwater Quality Analysis on Ona Property in 1976
Table 3.7-6 Summary of Groundwater Quality on or Near the Ona Mine Site
Table 3.7-7 Groundwater Quality Collected at the Ona Mine Clusters
Table 3.8-1 Soils Descriptions Found on the Ona Mine Site
Table 3.8-2 Sinkhole Potential

DRAFT

Table 3.8-3 Typical Concentrations of Radium-226 in Phosphate Ore, Rock, and Waste
Table 3.8-4 Soil Radium-226 Concentrations at the Ona Mine Site
Table 3.8-5 Results Collected at the IMC Site and Typical Radioactivity Levels from the BRC
Table 3.10-1 National and State AAQS, Allowable PSD Increments, and Significant Impact Levels
Table 3.10-2 Monthly Temperatures, Wauchula and Tampa International Airport
Table 3.10-3 Wind Direction and Wind Speed Measured at Tampa International Airport
Table 3.10-4 Wind Direction and Wind Speed Measured at Orlando International Airport
Table 3.10-5 Occurrences of Atmospheric Stability Classes Determined at Tampa International Airport
Table 3.10-6 Occurrences of Atmospheric Stability Classes Determined at Orlando International Airport
Table 3.12-1 General Population Characteristics
Table 3.12-2 Existing Conditions Analysis
Table 3.12-3 Annual Transportation Growth Rates
Table 3.12-4 Transportation Growth Rates Using FSUTMS Data
Table 3.12-5 Tax Base and Revenue for Hardee County and Florida
Table 3.12-6 Ad Valorem Tax Property Appraisal of the IMC Ona Tract
Table 3.12-7 Ona Mine Project – Environmental Justice Survey Census Data
Table 4.2-1 Ona Mine Wide Land Use/ Cover Analysis
Table 4.2-2 Wetland Impacts Summary USACE Jurisdictional Areas
Table 4.2-3 Example Mine and Reclamation Schedule – Wetland Habitat
Table 4.2-4 Acreages of Jurisdictional Areas
Table 4.2-5 Acreage Analysis of Jurisdictional Areas to be Mined/Disturbed
Table 4.2-6 Planting List for Bay and Gum Swamp (611/613)
Table 4.2-7 Planting List for Hardwood Swamp (FLUCFCS 615/616/617)
Table 4.2-8 Planting List for Wetland Coniferous (FLUCFCS 620)
Table 4.2-9 Planting List for Mixed Forest Swamp (FLUCFCS 630)
Table 4.2-10 Proposed Transitional Trees and Shrubs to be Planted in Upper Wetland Zone
Table 4.2-11 Planting List for Freshwater Marsh (FLUCFCS 641)
Table 4.2-12 Planting List for Shrub Marsh (FLUCFCS 646)
Table 4.2-13 Isolated Wetland Analysis Summary
Table 4.2-14 Planting List for Ephemeral Marsh
Table 4.2-15 Planting List for Wet Prairie (FLUCFCS 643)

DRAFT

Table 4.4-1 Potential Impacts to State and Federally Listed Plants and Wildlife
Table 4.5-1 Expected Streamflow During Mining Operations
Table 4.5-2 Estimated ET for Various Land Uses
Table 4.5-3 Fort Green & Ona Mine Monthly Water Budget (Model Summary)
Table 4.5-4 Basin Characteristics for Ona Mine Site – Pre-Mining Versus Post-Reclamation
Table 4.5-5 Runoff Characteristics Ona Mine Site – Post Reclamation
Table 4.6-1 Mine Recirculation System Water Quality, used in Ditch and Berm System
Table 4.6-2 Comparison of Typical Phosphate Mine NPDES Outflow Values with Horse Creek and Brushy Creek Water Quality Data and Florida Class III Standards
Table 4.6-3 Reagent Consumption Projected
Table 4.6-4 IMC Mine's Clay Process Water Quality (1995-2000)
Table 4.6-5 IMC Mine's Tailings Process Water Quality (1995-2000)
Table 4.7-1 Lateral Seepage Characteristics for Ona Mine Site
Table 4.8-1 Comparison of Pre-Mining and Post-Mining Topography
Table 4.8-2 Comparison of Agricultural Yields per Acre
Table 4.8-3 Comparison of Soil Chemical Properties
Table 4.10-1 Summary of PM_{10} Monitoring Data Collected in Polk County From 1991-2000
Table 4.12-1 Economic Loss From Agricultural Land Use Conversion
Table 4.12-2 Projected Link LOS Analysis Peak Hour Directional Volumes (vph)
Table 4.18-1 IMC Ona Energy Requirements
Table 4.26-1 Peace River Basin Summary of Land Cover for 1975
Table 4.26-2 Peace River Basin Summary of Land Cover for 2000
Table 4.26-3 Peace River Basin Summary of Land Cover for 2025
Table 4.26-4 Comparison of Predicted and Actual Mining Activities Within The Peace River Basin
Table 4.26-5 Summary of Estimated Water Withdrawal (mgd) in the Region by Source, Category, and County, 1975
Table 4.26-6 Summary of Estimated Water Withdrawal (mgd) in the Region by Source, Category, and County, 1999
Table 4.26-7 Summary of Estimated Change in Water Withdrawal (mgd) in the Region by Source, Category, and County, 1975 to 1999
Table 4.26-8 Summary of Estimated Water Withdrawal (mgd) in the Region by Category and County, 2020

DRAFT

Table 4.26-9 Summary of Estimated Change in Water Withdrawal (mgd) in the Region by Source, Category, and County, 1999 to 2020
Table 4.26-10 Peace River Basin Summary of Land Cover Changes from 1975 to 2025
Table 4.26-11 Payne Creek Basin Summary of Land Cover for 1975.
Table 4.26-12 Payne Creek Basin Summary of Land Cover for 2000.
Table 4.26-13 Payne Creek Basin Summary of Land Cover for 2025.
Table 4.26-14 Horse Creek Basin Summary of Land Cover for 1975
Table 4.26-15 Horse Creek Basin Summary of Land Cover for 2000
Table 4.26-16 Horse Creek Basin Summary of Land Cover for 2025
Table 4.26-17 Joshua Creek Basin Summary of Land Cover for 1975
Table 4.26-18 Joshua Creek Basin Summary of Land Cover for 2000
Table 4.26-19 Joshua Creek Basin Summary of Land Cover for 2025
Table 4.26-20 Payne Creek Basin Summary of Land Cover Changes for 1975 through 2025
Table 4.26-21 Horse Creek Basin Summary of Land Cover Changes for 1975 through 2025
Table 4.26-22 Joshua Creek Basin Summary of Land Cover Changes for 1975 through 2025
Table 4.26-23 Hydrologic Soil Types in Payne Creek, Horse Creek and Joshua Creek
Table 4.26-24 Summary Rainfall/Streamflow Relationship of Payne Cr., Horse Cr., and Joshua Cr. For 1963-1999
Table 4.26-25 Description of Stream Segments in Peace River Basin for Water Quality Summary Table
Table 4.26-26a Summary of Water Quality for Segments of the Peace River
Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin
Table 4.26-27 Summary of Trend Tests Computed for Peace River Basin Study
Table 4.26-28 Payne Creek NPDES Mine Water Discharge Sampling 1976-2000
Table 4.26-29 Payne Creek NPDES Mine Water Discharge Trends 1993-2000
Table 4.26-30 Horse Creek NPDES Mine Water Discharge Sampling 1988-2000
Table 4.26-31 Horse Creek NPDES Mine Water Discharge Trends 1988-2000
Table 4.26-32 Horse Creek Basin North of SR 64 Summary of Land Cover Changes for 1975 through 2025
Table 4.26-33 Horse Creek Basin Between SR 64 and SR 72 Summary of Land Cover Changes for 1975 through 2025
Table 4.26-34 1997 Florida Employment and Wages
Table 4.26-35 Comparison of Land Use Data for 1975, 2000, 2025 with and without the Ona Site, and Post-reclamation

DRAFT

Table 1.6-1 Approvals and Permits to Develop the Ona Mine

Type of Government	Name of Agency	Permit
Local	Hardee County Board of County Commissioners (BOCC)	DRI Development Order to allow development of the Ona site as proposed herein
		Approval of a Development Order amendment for the Fort Green Southern Reserves Development Order to allow siting of additional proposed clay settling areas and revisions to the post-reclamation topography and reveg-etation plans as part of the Ona mine review and approval
		Issuance of a Major Special Exception Use Permit (rezoning required) for the Ona site
		Master Mining Plan approval for the Ona site
		Master Mining Plan Amendment approval for the Fort Green Southern Reserves tract
		Initial annual unit review approval for the Ona site
State	CFRPC	DRI review and recommendation to the Hardee County Board of County Commissioners for the Ona site
		Review of the proposed amendments to the Fort Green Southern Reserves Development Order as part of the Ona Mine review
	Florida Department of Transportation (FDOT)	Road Crossing Permit (for access corridors and draglines)
	FDEP	Environmental Resource Permit for the Ona site
		Conceptual Reclamation Plan approval for the Ona Mine
		Conceptual Reclamation Plan amendment approval for the Fort Green Mine
		Amendments to the life-of-mine dredge and fill permit for Fort Green Southern Reserves tract
	Department of Community Affairs	DRI Development Order oversight review for the Ona site
		DRI Development Order oversight review for the Fort Green Southern Reserves tract
	SWFWMD	Well abandonment permits
		Well construction permits (for sealing water supply and monitor wells only)
	Department of State, Division of Historic Resources	Archaeological and historical site evaluation
	Florida Fish and Wildlife Conservation Commission	Species restocking (relocation/take) permits (only if listed species found on the Ona site are proposed to be disturbed or relocated)
Federal	US Army Corps of Engineers	Section 404 Dredge and Fill Permit for the Ona site
		Section 404 Dredge and Fill Permit amendment for the Fort Green Southern Reserves life-of-mine permit
	US Fish and Wildlife Service	Take and Incidental Take Permits (only if listed species found on the Ona site are proposed to be disturbed or relocated)

DRAFT

Table 1.6-2 Approvals and Permits to Construct the Proposed Ona Beneficiation Plant

Type of Government	Name of Agency	Permit
Local	Hardee County BOCC	Building permits (multiple, as needed)
		Driveway (access road) connection
State	FDEP	Public water supply construction and operation
		Domestic wastewater construction and operation
		Stationary source of air pollution construction and operation (for soda ash unloading and storage at plant when built)
		Industrial wastewater construction
		National Pollutant Discharge Elimination System surface water discharge outfall (delegated by USEPA)
	FDOT	Driveway (access road) connection
	SWFWMD	Well construction permits (for plant potable, fire suppression, and production make-up supply and monitor wells)

Note: Tables 1.6-2 and 1.6-3 do not repeat the approvals listed in Table 1.6-1, although some may be applicable (e.g., the Hardee County BOCC DRI Development Orders are also expected to approve the siting of the proposed Ona and Beneficiation Plant and state and federal species relocation permits would be acquired whenever necessary).

DRAFT

Table 1.6-3 Approvals and Permits to Implement the Proposed Mining, Waste Disposal, and Reclamation Plans

Type of Government	Name of Agency	Permit
Local	Hardee County BOCC	Annual review approval
		Mining unit review and approval (multiple sequential)
		Dam construction plan review and approval (multiple sequential)
		Approval of crossing or closing of County roads (multiple sequential)
State	SWFWMD	Well construction permits (for sealing water supply and monitor wells)
		Well abandonment permits (multiple sequential)
	FDEP	Reclamation program approvals (multiple sequential)
		Earthen dam construction and operation (multiple sequential)
		Additional groundwater discharge points (multiple sequential)
		Additional surface water discharge outfalls (multiple sequential)
	FDOT	Approval of crossing of State Road 64
Federal	Federal Aviation Administration (FAA)	Review of mining plans proposed to be conducted within 20,000 feet of the Wauchula Municipal Airport runway. (This would be done when mining is close to the airport zone)

Note: Tables 1.6-2 and 1.6-3 do not repeat the approvals listed in Table 1.6-1, although some may be applicable (e.g., the Hardee County BOCC DRI Development Orders are also expected to approve the siting of the proposed Ona and Beneficiation Plant and state and federal species relocation permits would be acquired whenever necessary).

DRAFT

Table 2.2-1 - Estimated Annual Mine Production Rates (Acres, Cubic Yards, Tons)

Mining Period	Maximum Acres Mined in any one Year	Averages Acres Mined per Year	Average Tons Mined per Year (Tons & Yards X 1,000)			
			Overburden (yd^3)	Sand Tailings	Clay	Phosphate Rock
Year 1- 8	565	363	13,900	9,250*	4,250	3,000
Year 9- 24	1,146	842	34,800	8,500*	8,500	6,000
Average	--	675	--	--	--	--

Source: IMC, 2002.

yd^3 = cubic yards

* = 1st year disposal at Fort Green Mine

DRAFT

Table 2.2-2 - Mining Area (Acres) by Alternative

	Total Area	Mined/ Disturbed	Not Disturbed By Mining Activities
IMC's Proposed Action*	20,676	15,836	4,840
IMC's Original Proposal**	20,676	17,593	3,083
AWG Conservation Area**	20,676	12,969	7,707

Source: *IMC, 2002.

**Data provided by IMC

DRAFT

Table 2.2-3 - Floridan Aquifer Withdrawals for Phosphate Mining

Year	Withdrawal (gpd)	Rock Produced (tons)	Gallons per Ton of Rock
1991	117,485,900	36,200,000	1,185
1992	88,417,600	36,200,000	892
1993	64,535,036	25,200,000	935
1994	62,405,789	29,000,000	785
1995	50,125,000	33,800,000	541
1996	56,034,000	36,200,000	565
1997	56,843,000	32,800,000	633
1998	53,660,900	34,000,000	576
1999	52,243,741	30,200,000	631

Source: IMC, 2002.

gpd = gallons per day

DRAFT

Table 2.2-4 - Project Average Annual and Peak Monthly Groundwater Use Demands for Ona Mine

Project Phase	Average Annual Demand (gpd)		Peak Monthly Demand (gpd)	
	Potable	Non-Potable	Potable	Non-potable
Permitting	0	0	0	0
Construction	NA	NA	NA	NA
Operation	24,000	12,000,000	24,000	16,000,000
Final Reclamation	5,000	0	5,000	0

Source: IMC, 2002.

gpd = gallons per day

NA = not applicable

DRAFT

Table 2.2-5 - Average Annual Water Budget

AVERAGE ANNUAL WATER BUDGET UNDER NATURAL CONDITIONS					
SOURCES	**ACRE-FT**	**MGD**	**USES**	**ACRE-FT**	**MGD**
Rainfall	45,902	40.98	ET	34,368	30.68
			Recharge	904	0.81
			Runoff	10,629	9.49
TOTAL	45,902	40.98		45,902	40.98
AVERAGE ANNUAL WATER BUDGET WITH MINING					
SOURCES	**ACRE-FT***	**MGD***	**USES**	**ACRE-FT**	**MGD**
Rainfall on Active Clay Areas	4,312	3.85	Disposal Area Evap.	4,243	3.79
Overburden Drainage	2,700	2.41	Waste Clay	30,059	26.83
Matrix Water + Seal Water	12,844	11.47	Sand Tailings	3,688	3.29
Seepage In	481	0.43	Overburden Refill	4,051	3.62
Makeup Required	5,162	4.61	Product	496	0.44
Clay Consolidation	13,746	12.27	Recharge	904	0.81
Change in Storage	-94	-0.08	Groundwater Outflow	4,549	4.06
Captured (Rainfall - ET)	13,798	12.32	NPDES Discharge	4,960	4.43
TOTAL	52,950	47.27		52,950	47.27

Source: IMC, 2002.

Note:
ET = Evapotransporation
* = rounding error, may not add up to total
ACRE-FT = Acre Feet
mgd = million gallons per day
NPDES = National Pollution Discharge Elimination System

DRAFT

Table 2.2-6 - Comparison of Typical NPDES Outflow Values with Horse Creek and Brushy Creek Water Quality Data

Parameter	Units	NPDES min	NPDES max	Horse Creek range	Brushy Creek range
pH	Std Units	6.8	8.2	5.04 – 7.42	5.4 – 7.07
Conductivity	μmhos/cm	300	500	50 – 276	47 – 388
Temperature	°C	18	28	9.2 – 28.2	18.8 – 29.8
Dissolved Oxygen	mg/L	5	8	2.7 – 8.3	1.6 – 5.9
TSS	mg/L	1	10	1 – 15	1 – 29
NVSS	mg/L	1	5	1 – 7	1 – 19
Total P	mg/L	0.4	1	0.17 – 1.32	0.26 – 1.05
Total N	mg/L	0.6	1.3	0.45 – 5.02	1.22 – 3.49
Sulfate	mg/L	40	150	2 – 54	2 – 76
Chlorophyll a	μg/L	2	8	1 – 6	1 – 16
Fluoride	mg/L	0.1	0.3	0.14 – 0.62	0.03 – 0.53

Source: IMC, 2002.

Note:

N = nitrogen

P = phosphorus

NVSS = non-valatile suspended solids

TSS = total suspended solids

DRAFT

Table 2.2-7 Mine Wide Land Use/Vegetation Cover Summary

(FLUCFCS No. Code) Type of Vegetative Cover	Acres Present Onsite Today (Premining)	Acres Proposed to be Left Undisturbed	Acres Proposed to be Disturbed	Proposed Reclamation	Acres Upon Completion of Reclamation
(100) Urban Land Uses					
(111) Single family homes	5.3	1.4	3.9	0.0	1.4
(112) Mobile homes	0.6	0.0	0.6	0.0	0.0
Subtotal	**5.8**	**1.4**	**4.5**	**0.0**	**1.4**
(200) Agricultural Uses					
(211) Improved pasture	7,306.3	305.8	7,000.4	4,955.9	5,261.7
(212) Unimproved pasture	145.7	1.2	144.5	0.0	1.2
(213) Woodland pasture	637.4	269.1	368.2	1,163.2	1,432.3
(215) Field crops	119.3	25.9	93.4	0.0	25.9
(221) Citrus groves	209.2	0.0	209.2	0.0	0.0
Subtotal	**8,417.9**	**602.1**	**7,815.8**	**6,119.1**	6,721.2
(300) Rangeland					
(310) Herbaceous	19.8	1.1	18.7	0.0	1.1
(320) Shrub and Brushland	0.5	0.0	0.5	673.2	673.2
(321) Palmetto prairies	2,898.0	491.3	2,406.7	1,797.2	2,288.5
(329) Other shrub and brush	105.4	29.8	75.6	0.0	29.8
(330) Mixed	30.2	1.4	28.9	0.0	1.4
Subtotal	**3,053.9**	**523.6**	**2,530.3**	**2,470.3**	2,993.9
(400) Upland Forests					
(410) Upland Coniferous Forests				1,243.0	1,243.0
(411) Pine flatwoods	1,479.6	536.4	943.1	493.1	1,029.5
(413) Sand pine	23.7	0.0	23.7	114.5	114.5
(414) Pine-mesic oaks	5.7	1.3	4.4	0.0	1.3
(425) Temperate hardwoods	756.5	559.7	196.8	94.1	653.8
(427) Live oak	1,242.2	666.5	575.7	101.3	767.7
(432) Sand live oak	404.2	77.2	327.0	271.7	348.9
(434) Hardwood-conifer mixed	1,058.0	377.1	681.0	616.1	993.1
(438) Mixed hardwoods	28.8	13.9	14.8	5.2	19.2
Subtotal	**4,998.7**	**2,232.1**	**2,766.6**	**2,939.0**	**5,171.1**
(500) Water					
Streams & Waterways	0.0	0.0	0.0	0.1 *	0.1
Natural streams (511)	20.9	13.3	7.6	0.5 *	13.8
Man-made ditches (512)	74.6	15.4	59.2	0.6	16.1
(510) Streams, Waterways, and Ditches - Total	95.5	28.7	66.8 *	1.3 *	30.0
(522) Lakes 100 -500 ac.	0.0	0.0	0.0	565.4	565.4
(523) Lakes 10 - 100 ac.	0.0	0.0	0.0	453.9	453.9
(534) Reservoirs < 10 ac. (cattle ponds)	20.2	2.0	18.3	14.0	16.0
Subtotal	**115.7**	**30.7**	**85.0**	**1,034.5**	**1,065.2**

DRAFT

Table 2.2-7 Mine Wide Land Use/Vegetation Cover Summary

(FLUCFCS No. Code) Type of Vegetative Cover	Acres Present Onsite Today (Premining)	Acres Proposed to be Left Undisturbed	Acres Proposed to be Disturbed	Proposed Reclamation	Acres Upon Completion of Reclamation
(600) Wetlands					
(611) Bay swamps	126.4	27.0	99.5	127.1	154.1
(613) Gum swamps	25.8	1.1	24.7	32.3	33.4
(615) Stream swamps	64.8	33.4	31.4	40.9	74.3
(616) Inland ponds and sloughs	2.9	0.0	2.9	0.0 #	0.0
(617) Mixed wetland hardwoods	1,048.5	580.6	467.9	704.6 *	1,285.2
(620) Wetland coniferous	31.6	1.9	29.6	107.5 #	109.4
(630) Wetland mixed hardwood-coniferous	137.1	55.7	81.4	260.0	315.7
Forested Sub total	1,434.1	699.7	734.4	1,272.4	1,972.1
Freshwater marshes (640 & 641)	1,413.0	480.2	932.8	1,043.9	1,524.1
Shrub swamps (646)	767.2	193.0	574.2	542.3	735.3
(641) Freshwater marshes (includes 646) - total	2,180.1	673.2	1,507.0	1,586.3	2,259.4
(643) Wet prairies	419.8	75.9	343.9	406.6	482.5
(644) Emergent aquatics	1.2	0.0	1.2	2.8	2.8
Marsh Sub total	2,601.2	749.1	1,852.1	1,995.7	2,744.7
Subtotal - Wetlands (600's)	**4,035.3**	**1,448.7**	**2,586.5**	**3,268.1**	**4,716.8**
(700) Barren Lands					
(743) Spoil areas	13.3	0.4	12.9	0.0	0.4
Subtotal	**13.3**	**0.4**	**12.9**	**0.0**	**0.4**
(800) Transportation Uses					
(814) Roads	35.0	0.6	34.4	5.1	5.7
Subtotal	**35.0**	**0.6**	**34.4**	**5.1**	**5.7**
Total: Ona Minesite	**20,675.5**	**4,839.5**	**15,836.1**	**15,836.1**	**20,675.6**

* Reclaimed 510, 512 are stream/ditch connections in access corridor crossings. Note that streams are included in 615 & 617.

\# Reclaimed 620 includes 616

Source: IMC, 2002.

DRAFT

Table 2.2-8 - Reclamation Schedule

Reclamation Type	Reclamation Activity	*Time - Years
Graded Overburden	0. End of Mine use	---
	1. Contour - Earthwork	18 months
	2. Re - vegetation	6 months
	3. Growth Period	1 year
	Total Time	**3 years**
Tailings Fill	0. End of Tailing fill (Mine use)	---
	1. Contour - Earthwork	18 months
	2. Re-vegetation	6 months
	3. Growth Period	1 year
	Total Time	**3 years**
Clay Settling Area	0. Ditch and drain surface	4 years
	1. Settling area abandonment (End of Mine use)	---
	2. Contour - Earthwork	18 months
	3. Plant grasses	6 months
	4. Growth Period	1 year
	Total Time	**3 years**

Note: Times are based on completion of all mining activities within a program area that allows for reclamation of a sub-basin system rather than partial system.

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FG-4 In Service 1/1/80 Total Area (acres) = 600 Effective Area (acres) = 581 Remaining Feet to Fill = 2.7 Remaining Volume (ac-ft) = 1,569			Settling Area FG-6 In Service 7/1/84 Total Area (acres) = 780 Effective Area (acres) = 762 Remaining Feet to Fill = 4.1 Remaining Volume (ac-ft) = 3,124		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333	13,316	365	928,400	12,691	365	1,160,500
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**928,400**			**1,160,500**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FG-7			Settling Area FG-8/PC-11		
				In Service 1/1/88			In Service 1/1/93		
				Total Area (acres) = 615			Total Area (acres) = 457		
				Effective Area (acres) = 601			Effective Area (acres) = 400		
				Remaining Feet to Fill = 0.4			Remaining Feet to Fill = 1.5		
				Remaining Volume (ac-ft) = 240			Remaining Volume (ac-ft) = 600		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333	6,436	365	464,200	9,671	365	464,200
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**464,200**			**464,200**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FGH-1A In Service 1/1/87 Total Area (acres) = 528 Effective Area (acres) = 516 Remaining Feet to Fill = 5.3 Remaining Volume (ac-ft) = 2,735			Settling Area FGH-1B In Service 3/1/89 Total Area (acres) = 536 Effective Area (acres) = 526 Remaining Feet to Fill = 9.8 Remaining Volume (ac-ft) = 5,155		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333	3,748	365	232,100	22,063	365	1,392,600
1996	3,387,300	8,398	28,227,500	5,470	365	338,730	48,298	31	258,920
							8,050	334	464,942
1997	3,480,400	8,629	29,003,333	5,621	365	348,040	5,514	365	348,040
1998[1]	3,450,000	8,554	28,750,000	8,358	365	517,500	5,466	365	345,000
1999	3,244,000	8,043	27,033,333				5,139	182	161,756
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025 [2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**1,436,370**			**2,971,257**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FGH-2 In Service 2/1/96 Total Area (acres) = 1000 Effective Area (acres) = 950 Feet to Fill = 29 Available Volume (ac-ft) = 28,000			Settling Area FGH-3 In Service 7/1/99 Total Area (acres) = 933 Effective Area (acres) = 933 Feet to Fill = 28.0 Available Volume (ac-ft) = 26,124		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500	22,285	334	2,324,709			
1997	3,480,400	8,629	29,003,333	24,424	365	2,784,320			
1998[1]	3,450,000	8,554	28,750,000	22,697	365	2,587,500			
1999	3,244,000	8,043	27,033,333	25,611	182	1,455,801			
				14,228	183	813,222	14,487	183	813,222
2000	5,874,583	14,565	48,954,858	7,730	365	881,187	44,600	365	4,993,396
2001	7,616,002	18,883	63,466,683				68,024	190	3,964,494
2002	9,328,903	23,130	77,740,858	16,366	195	996,787	24,997	195	1,495,180
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**11,843,525**			**11,266,292**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area PC-12			Settling Area FGH-4		
				In Service		7/1/01	Projected In Service		1/1/02
				Total Area (acres) =		503	Total Area (acres) =		465
				Effective Area (acres) =		449	Effective Area (acres) =		440
				Feet to Fill =		44.5	Feet to Fill =		72.7
				Available Volume (ac-ft) =		20,000	Available Volume (ac-ft) =		32,000
	Clay Production			Filling Rate	Days of	Dry Tons	Filling Rate	Days of	Dry Tons
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	(Wet Tons/Ac-Yr)	Filling	Stored	(Wet Tons/Ac-Yr)	Filling	Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683	141,351	175	3,651,508			
2002	9,328,903	23,130	77,740,858	86,571	170	2,172,484	88,342	170	2,172,484
				43,286	195	1,245,984	44,171	195	1,245,984
2003	9,325,578	23,121	77,713,150				88,310	365	4,662,789
2004	10,035,629	24,882	83,630,242				76,027	365	4,014,252
2005	10,528,727	26,104	87,739,392	35,174	365	1,895,171			
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017				41,581	365	2,195,451
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**8,965,147**			**14,290,959**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FGH-5 Projected In Service 1/1/03 Total Area (acres) = 465 Effective Area (acres) = 385 Feet to Fill = 72.7 Available Volume (ac-ft) = 28,000			Settling Area O1-A Projected in Service 1/1/04 Total Area (acres) = 500 Effective Area (acres) = 373 Feet to Fill = 70 Available Volume (ac-ft) = 26,100		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150	100,926	365	4,662,789			
2004	10,035,629	24,882	83,630,242	108,611	365	5,017,815	22,421	365	1,003,563
2005	10,528,727	26,104	87,739,392				117,613	365	5,264,364
2006	10,313,598	25,571	85,946,650				71,430	365	3,197,215
2007	9,979,322	24,742	83,161,017	38,880	365	1,796,278			
2008	10,129,804	25,115	84,415,033	24,119	365	1,114,278			
2009	8,186,150	20,296	68,217,917				43,894	365	1,964,676
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**12,591,160**			**11,429,818**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area O1-B Projected in Service 1/1/05 Total Area (acres) = 500 Effective Area (acres) = 373 Feet to Fill = 70 Available Volume (ac-ft) = 26,100			Settling Area FM-1 Projected In Service 1/1/06 Total Area (acres) = 540 Effective Area (acres) = 380 Feet to Fill = 66.1 Available Volume (ac-ft) = 25,000		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392	75,272	365	3,369,193			
2006	10,313,598	25,571	85,946,650	73,734	365	3,300,351	83,685	365	3,816,031
2007	9,979,322	24,742	83,161,017	66,886	365	2,993,797	65,653	365	2,993,797
2008	10,129,804	25,115	84,415,033	24,895	365	1,114,278	64,422	365	2,937,643
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667	22,855	365	1,023,000	28,043	365	1,278,750
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025 [2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**11,800,619**			**11,026,221**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area FM-2 Projected In Service 1/1/08 Total Area (acres) = 520 Effective Area (acres) = 365 Feet to Fill = 60.8 Available Volume (ac-ft) = 22,200			Settling Area O1-C Projected in Service 1/1/09 Total Area (acres) = 600 Effective Area (acres) = 446 Feet to Fill = 70 Available Volume (ac-ft) = 31,200		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033	113,324	365	4,963,604			
2009	8,186,150	20,296	68,217,917	48,594	365	2,128,399	76,477	365	4,093,075
2010	8,525,000		71,041,667	40,873	365	1,790,250	82,829	365	4,433,000
2011	8,525,000		71,041,667				47,786	365	2,557,500
2012	8,525,000		71,041,667				33,450	365	1,790,250
2013	8,525,000		71,041,667	29,195	365	1,278,750			
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667				31,857	365	1,705,000
2016	8,525,000		71,041,667						
2017	8,525,000		71,041,667						
2018	8,525,000		71,041,667						
2019	8,525,000		71,041,667						
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025 [2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**10,161,003**			**14,578,825**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area O2 Projected In Service 1/1/11 Total Area (acres) = 780 Effective Area (acres) = 615 Feet to Fill = 70 Available Volume (ac-ft) = 43,100			Settling Area O3-A Projected In Service 1/1/13 Total Area (acres) = 900 Effective Area (acres) = 695 Feet to Fill = 85 Available Volume (ac-ft) = 59,100		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667	80,860	365	5,967,500			
2012	8,525,000		71,041,667	91,257	365	6,734,750			
2013	8,525,000		71,041,667	40,430	365	2,983,750	51,109	365	4,262,500
2014	8,525,000		71,041,667	28,879	365	2,131,250	76,664	365	6,393,750
2015	8,525,000		71,041,667				81,775	365	6,820,000
2016	8,525,000		71,041,667				66,442	365	5,541,250
2017	8,525,000		71,041,667	28,879	365	2,131,250			
2018	8,525,000		71,041,667				20,444	100	467,123
2019	8,525,000		71,041,667				35,776	365	2,983,750
2020	8,525,000		71,041,667						
2021	8,525,000		71,041,667						
2022	8,525,000		71,041,667						
2023	8,525,000		71,041,667						
2024	8,525,000		71,041,667						
2025[2]	8,525,000		71,041,667						
TOTALS	**241,659,496**	**353,856**	**NA**			**19,948,500**			**26,468,373**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area O3-B Projected In Service 1/1/16 Total Area (acres) = 825 Effective Area (acres) = 646 Feet to Fill = 75 Available Volume (ac-ft) = 48,500			Settling Area O4-A Projected In Service 1/1/19 Total Area (acres) = 815 Effective Area (acres) = 647 Feet to Fill = 70 Available Volume (ac-ft) = 45,300		
	Clay Production								
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored
1995	4,642,000	11,509	38,683,333						
1996	3,387,300	8,398	28,227,500						
1997	3,480,400	8,629	29,003,333						
1998[1]	3,450,000	8,554	28,750,000						
1999	3,244,000	8,043	27,033,333						
2000	5,874,583	14,565	48,954,858						
2001	7,616,002	18,883	63,466,683						
2002	9,328,903	23,130	77,740,858						
2003	9,325,578	23,121	77,713,150						
2004	10,035,629	24,882	83,630,242						
2005	10,528,727	26,104	87,739,392						
2006	10,313,598	25,571	85,946,650						
2007	9,979,322	24,742	83,161,017						
2008	10,129,804	25,115	84,415,033						
2009	8,186,150	20,296	68,217,917						
2010	8,525,000		71,041,667						
2011	8,525,000		71,041,667						
2012	8,525,000		71,041,667						
2013	8,525,000		71,041,667						
2014	8,525,000		71,041,667						
2015	8,525,000		71,041,667						
2016	8,525,000		71,041,667	38,490	365	2,983,750			
2017	8,525,000		71,041,667	82,479	365	6,393,750			
2018	8,525,000		71,041,667	109,972	265	6,189,384			
				87,977	100	1,868,493			
2019	8,525,000		71,041,667	21,994	365	1,705,000	49,411	365	3,836,250
2020	8,525,000		71,041,667				54,901	365	4,262,500
2021	8,525,000		71,041,667				54,901	365	4,262,500
2022	8,525,000		71,041,667	37,390	365	2,898,500	23,058	365	1,790,250
2023	8,525,000		71,041,667				21,960	365	1,705,000
2024	8,525,000		71,041,667				27,450	365	2,131,250
2025[2]	8,525,000		71,041,667				27,450	183	1,065,625
TOTALS	**241,659,496**	**353,856**	**NA**			**22,038,877**			**19,053,375**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-9 Model Summary of Clay Disposal Plan

				Settling Area O4-B Projected In Service 1/1/20 Total Area (acres) = 676 Effective Area (acres) = 521 Feet to Fill = 70 Available Volume (ac-ft) = 36,500			Settling Area O4-C Projected In Service 1/1/22 Total Area (acres) = 656 Effective Area (acres) = 505 Feet to Fill = 70 Available Volume (ac-ft) = 35,400			Total Clay Stored (Dry Tons)
	Clay Production									
Year	Dry Tons/Year	Ac-ft/Year @ 25%S	Wet Tons/Year	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	Filling Rate (Wet Tons/Ac-Yr)	Days of Filling	Dry Tons Stored	
1995	4,642,000	11,509	38,683,333							**4,642,000**
1996	3,387,300	8,398	28,227,500							**3,387,300**
1997	3,480,400	8,629	29,003,333							**3,480,400**
1998[1]	3,450,000	8,554	28,750,000							**3,450,000**
1999	3,244,000	8,043	27,033,333							**3,244,000**
2000	5,874,583	14,565	48,954,858							**5,874,583**
2001	7,616,002	18,883	63,466,683							**7,616,002**
2002	9,328,903	23,130	77,740,858							**9,328,903**
2003	9,325,578	23,121	77,713,150							**9,325,578**
2004	10,035,629	24,882	83,630,242							**10,035,629**
2005	10,528,727	26,104	87,739,392							**10,528,727**
2006	10,313,598	25,571	85,946,650							**10,313,598**
2007	9,979,322	24,742	83,161,017							**9,979,322**
2008	10,129,804	25,115	84,415,033							**10,129,804**
2009	8,186,150	20,296	68,217,917							**8,186,150**
2010	8,525,000		71,041,667							**8,525,000**
2011	8,525,000		71,041,667							**8,525,000**
2012	8,525,000		71,041,667							**8,525,000**
2013	8,525,000		71,041,667							**8,525,000**
2014	8,525,000		71,041,667							**8,525,000**
2015	8,525,000		71,041,667							**8,525,000**
2016	8,525,000		71,041,667							**8,525,000**
2017	8,525,000		71,041,667							**8,525,000**
2018	8,525,000		71,041,667							**8,525,000**
2019	8,525,000		71,041,667							**8,525,000**
2020	8,525,000		71,041,667	68,178	365	4,262,500				**8,525,000**
2021	8,525,000		71,041,667	68,178	365	4,262,500				**8,525,000**
2022	8,525,000		71,041,667	27,271	365	1,705,000	35,169	365	2,131,250	**8,525,000**
2023	8,525,000		71,041,667	27,271	365	1,705,000	84,406	365	5,115,000	**8,525,000**
2024	8,525,000		71,041,667	34,089	365	2,131,250	70,338	365	4,262,500	**8,525,000**
2025[2]	8,525,000		71,041,667	34,089	183	1,065,625	70,338	183	2,131,250	**4,262,500**
TOTALS	**241,659,496**	**353,856**	**NA**			**15,131,875**			**13,640,000**	**241,659,496**

[1] Clays from reserves south of SR 62 introduced

[2] Actual clay production is 4,262,500 tons (mined out in mid 2025)

Source: IMC, 2002.

Table 2.2-10 Tailings Disposal Schedule

Mining Activity	Year	Acres								
		Total Mined in Each Year	Total To Date Mining	Mined - outside of CSA	Total to Date Mined outside of CSA	Available for Tailings in each Year - Non pond	Total to Date Available for Tailing	Tailings disposal area needed per year	Total area needed for Tailings	Difference = Needed - Available
	Current		-							
Mining	2003	32	32	32	32	First year tailing disposed in Ft. Green Mine area				-
Mining	2004	163	195	146	178	20	20	230	230	(210)
Mining & Recl.	2005	226	420	167	345	130	150	230	460	(310)
Mining & Recl.	2006	354	774	302	647	140	290	230	690	(400)
Mining & Recl.	2007	540	1,314	321	968	200	490	230	920	(430)
Mining & Recl.	2008	565	1,879	306	1,274	310	800	230	1,150	(350)
Mining & Recl.	2009	470	2,349	289	1,563	290	1,090	230	1,380	(290)
Mining & Recl.	2010	555	2,904	333	1,896	330	1,420	230	1,610	(190)
Mining & Recl.	2011	568	3,473	300	2,197	300	1,720	460	2,070	(350)
Mining & Recl.	2012	718	4,191	334	2,530	330	2,050	460	2,530	(480)
Mining & Recl.	2013	696	4,887	502	3,032	510	2,560	460	2,990	(430)
Mining & Recl.	2014	759	5,646	570	3,602	570	3,130	460	3,450	(320)
Mining & Recl.	2015	881	6,528	583	4,186	580	3,710	460	3,910	(200)
Mining & Recl.	2016	829	7,357	303	4,489	300	4,010	460	4,370	(360)
Mining & Recl.	2017	906	8,262	711	5,200	720	4,730	460	4,830	(100)
Mining & Recl.	2018	960	9,222	812	6,012	810	5,540	460	5,290	250
Mining & Recl.	2019	1,054	10,277	862	6,874	860	6,400	460	5,750	650
Mining & Recl.	2020	1,146	11,423	1,131	8,005	1,150	7,550	460	6,210	1,340
Mining & Recl.	2021	1,083	12,506	1,034	9,039	1,050	8,600	460	6,670	1,930
Mining & Recl.	2022	919	13,425	791	9,829	800	9,400	460	7,130	2,270
Mining & Recl.	2023	1,033	14,458	944	10,773	900	10,300	460	7,590	2,710
Mining & Recl.	2024	709	15,167	709	11,482	710	11,010	460	8,050	2,960
Mining & Recl.	2025	360	15,527	360	11,842	700	11,710	460	8,510	3,200
Reclamation	2026		15,527			132	11,842		8,510	3,332
Reclamation	2027	-	15,527							
Reclamation	2028	-	15,527							
Reclamation	2029	-	15,527							
Reclamation	2030	-	15,527							
Completed	2031		15,527							
	Total	15,527.2		11,842.4				8,510		
								369,768,861.00	Tons	

Source: IMC, 2002.

DRAFT

Table 2.5-1 - Comparison of Potential Impacts by Alternative

Environmental Considerations	No Action Alternative	Compromise Area Alternative (IMC's Proposed Action)	No USACE Jurisdictional Wetlands Impacts Alternative	IMC'c Original Area to be Mined	Natural Systems Group Recommended Areas of Conservation Interest
Vegetation	Potential for impacts from urban and agricultural development with minimal regulatory oversight.	Temporary adverse impact. Site clearing in preparation for mining operations would result in the direct loss of vegetative communities. This loss is not considered permanent, as the total acreage of most vegetative communities would be restored during post-mining reclamation. Major changes would be the addition of several large lakes on the eastern side of the property.	Temporary adverse impact similar to proposed action, but on a smaller scale since only 1,122 acres would be affected.	Temporary adverse impact similar to the proposed action, but on a larger scale as this alternative would disturb 17,593 acres. The majority of lands proposed to remain undisturbed include the floodplains associated with Horse and Brushy Creeks. Loss of habitat is not considered permanent, as post-mining reclamation would restore existing vegetative communities.	Temporary adverse impact similar to the proposed action, but reduced in scope from 15,836 acres to 12,969 acres.
Wetlands	Potential for impacts from urban and agricultural development with minimal regulatory oversight.	Temporary adverse impact with 2,765 acres (56.4 percent) of USACE jurisdictional wetlands impacted, 2,136 acres (43.5 percent) undisturbed and 3,918 acres reclaimed (23.5 percent increase in pre-mining acres).	No adverse impact.	Temporary adverse impact similar to the proposed action but on a larger scale with 3,688 acres (75 percent) of USACE jurisdictional wetlands impacted and 1,213 acres (25 percent) undisturbed.	Temporary adverse impact similar to the proposed action, but with 1,988 acres (41 percent) of USACE jurisdictional wetlands impacted and 2,913 acres (59 percent) undisturbed.

Table 3.2-1 Upland Community Assessments Summary of Species Composition

Upland No	FLUCFCS		Canopy		Subcanopy		Shrubs		Ground Cover	
430401	321	% Cover	0-5		0-5		50-75		25-50	
Acres Mined:	3.50	Species 1 (%)	50-75	Slash Pine	100	Live Oak	50-75	Saw Palmetto	5-25	Myrtle Oak
Acres Disturbed:	0.00	Species 2 (%)	5-25	Live Oak			5-25	Live Oak	25-50	Threeawn Wiregrass
Acres Avoided:	0.00	Species 3 (%)					5-25	Shiny Blueberry	5-25	Blackroot
		Associate(s)						Wax Myrtle, Winged Sumac		Elephant's Foot, Broomsedge Bluestem
Total Acres:	3.50	Endangered Species								

Upland No	FLUCFCS		Canopy		Subcanopy		Shrubs		Ground Cover	
430402	411	% Cover	25-50		0-5		50-75		5-25	
Acres Mined:	33.25	Species 1 (%)	50-75	Slash Pine	100	Live Oak	50-75	Saw Palmetto	5-25	Threeawn Wiregrass
Acres Disturbed:	0.00	Species 2 (%)	5-25	Live Oak			5-25	Gallberry	25-50	Broomsedge Bluestem
Acres Avoided:	0.00	Species 3 (%)					0-5	Shiny Blueberry	5-25	Blackroot
		Associate(s)						Wax Myrtle, Winged Sumac		Elephant's Foot, Cypress Grass, Variable Witchgrass
Total Acres:	33.25	Endangered Species								

Upland No	FLUCFCS		Canopy		Subcanopy		Shrubs		Ground Cover	
430403	321	% Cover	5-25		0-5		50-75		25-50	
Acres Mined:	78.09	Species 1 (%)	50-75	Slash Pine	50-75	Live Oak	50-75	Saw Palmetto	5-25	Broomsedge Bluestem
Acres Disturbed:	0.00	Species 2 (%)	5-25	Live Oak	5-25	Slash Pine	5-25	Gallberry	5-25	Slender Goldenrod
Acres Avoided:	0.00	Species 3 (%)	5-25	Laurel Oak			0-5	Wax Myrtle	5-25	Bahia Grass
		Associate(s)						Shiny Blueberry		Cypress Grass
Total Acres:	78.09	Endangered Species								

SAMPLE
SAMPLE
SAMPLE

Source: IMC, 2002.

Table 3.2-2 Wetland Impacts Summary USACE Jurisdictional Areas

(FLUCFCS No. Code) Type of Vegetative Cover	Current Total Jurisdiction	Acres Proposed to be Left Undisturbed	Acres to be Mined or Disturbed (2)	Proposed Reclamation (3)	Projected Total Post Reclamation Jurisdiction
OTHER					
(111) Single family homes (1)	0.4	0.4	0.0	0.0	0.4
(743) Spoil areas	0.1	0.0	0.1	0.0	0.0
(814) Roads	0.0	0.0	0.0	0.0	0.0
Total Other (1)	**0.5**	**0.4**	**0.1**	**0.0**	**0.4**
OPEN WATER					
(500) Water					
(510) Streams & Waterways	0.0	0.0	0.0	0.1 (7)	0.1
(512) Man-made ditches	46.0	13.1	32.9	0.6	13.7
(522) Lakes 100 -500 ac.	0.0	0.0	0.0	565.4 (8)	565.4
(523) Lakes 10 - 100 ac.	0.0	0.0	0.0	453.9 (8)	453.9
(534) Reservoirs < 10 ac. (cattle ponds)	13.0	1.8	11.2	14.0 (8)	15.8
Total Open Water	**59.1**	**14.9**	**44.1**	**1034.0**	**1,049.0**
HERBACEOUS					
(211) Improved pasture	62.6	15.5	47.2	0.0 (4)	15.5
(212) Unimproved pasture	0.9	0.0	0.9	0.0 (4)	0.0
(215) Field crops	0.0	0.0	0.0	0.0	0.0
(310) Herbaceous	5.3	0.7	4.6	0.0 (4)	0.7
(321) Palmetto prairies	9.2	3.3	5.9	0.0 (4)	3.3
(329) Other shrub and brush	18.9	13.0	5.9	0.0 (4)	13.0
(330) Mixed	9.9	1.1	8.8	0.0 (4)	1.1
640 Vegetated Non-Forests					
(641) Freshwater marshes	1,159.6	426.0	733.6	1043.9	1,469.9
(643) Wet prairies	340.0	66.1	273.9	406.6	472.8
(644) Emergent aquatics	1.2	0.0	1.2	2.8	2.8
(646) Shrub swamps	696.5	182.9	513.6	158.5 (9)	341.4
Total Herbaceous	**2,304.1**	**708.5**	**1,595.6**	**1611.8 (9)**	**2,320.4**
FORESTED					
(213) Woodland pasture	90.5	73.9	16.6	0.0 (5)	73.9
(411) Pine flatwoods	96.8	27.7	69.1	0.0 (6)	27.7
(414) Pine-mesic oaks	0.0	0.0	0.0	0.0	0.0
(425) Temperate hardwoods	416.4	351.2	65.2	0.0 (5)	351.2
(427) Live oak	239.8	138.7	101.1	0.0 (5)	138.7
(434) Hardwood-conifer mixed	281.6	110.4	171.1	0.0 (5)	110.4
(438) Mixed hardwoods	1.5	0.7	0.8	0.0 (5)	0.7
(511) Natural streams	20.2	13.1	7.0	0.5	13.6
(611) Bay swamps	96.2	27.0	69.2	110.8	137.8
(613) Gum swamps	25.6	1.1	24.5	32.3	33.4
(615) Stream swamps	64.8	33.4	31.4	40.8	74.2
(616) Inland ponds and sloughs	2.9	0.0	2.9	0.0	0.0
(617) Mixed wetland hardwoods	1,035.5	577.7	457.8	703.7	1,281.3
(620) Wetland coniferous	28.7	1.9	26.7	105.3	107.3
(630) Wetland mixed hardwood-coniferous	137.1	55.7	81.4	259.2	314.9
Total Forested	**2,537.3**	**1,412.5**	**1,124.8**	**1252.7**	**2,665.2**
Site Total	**4,901.0**	**2,136.4**	**2,764.7**	**3898.5 (9)**	**6,034.9**

Notes:

1. Includes 0.36 acre homesite that was claimed.
2. Based on IMC Mine plan in March 2001 ERP application revision
3. Based on IMC Reclamation Plan in March 2001 ERP application revision.
4. Mitigated as 643 - Wet Prairie.
5. Mitigated as 617 - Mixed Hardwood Wetland Forests.
6. Mitigated as 620 - Wetland coniferous Forest.
7. Stream mitigation not only comprised of FLUCFCS 510, but also of FLUCFCS 615/617.
8. Number represents the total acres of open water (FLUCFCS 520) proposed onsite to be reclaimed. Please refer to Table A-40 for a tabulation of all reclaimed wetlands.
9. Includes 31.7 acres of offsite mitigation at the FG-3 reclamation program area.

Source: IMC, 2002.

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Common Name	Scientific Name	Onsite Habitat in Which Observed													Season Observed†
		Imp. Pasture	Wet Prairie	Pine Flatwoods	Palmetto Rangeland	Sand Pine	Xeric Oak Hammock	Woodland Pasture	Live Oak Hammock	Open Water/Ditches	Mixed Hardwood	Freshwater Marsh	Shrub Swamp	Other*	
Amphibians															
Oak toad	*Bufo quercicus*						U								S, F
Southern toad	*Bufo terrestris*			U	U	U			U						S, SM, F
Cricket frog	*Acris gryllus*			U						U		U			S, SM
Green treefrog	*Hyla cinerea*								U						F
Squirrel treefrog	*Hyla squirella*			U	U	U	U		U		U	U	U		S, SM, F
Chorus frog	*Pseudacris nigrita*									U	U	U	U		S, F
E. Narrow-mouthed toad	*Gastrophyrne carolinensis*					U	U								F
Greenhouse frog	*Eleutherodactylus planirostris*					U									F
Pig frog	*Rana grylio*									U			U		S, SM, F
Gopher frog	*Rana capito*					U	U								F
Southern leopard frog	*Rana sphenocephala*								U	U	U	U			S, SM
Reptiles															
American alligator	*Alligator mississippiensis*									U	U	U	U		S, SM, F
Florida box turtle	*Terrapene carolina bauri*										U				SM
Florida cooter	*Chrysemys floridana*								U	U		U			S, F
Gopher tortoise	*Gopherus polyphemus*	U		U	U	U	U	U	U	U					S, SM, F
Florida soft-shell	*Trionyx ferox*											U	U		S, SM
Green anole	*Anolis carolinensis*			U	U	U	U		U		U		U		S, SM, F
Six-lined racerunner	*Cnemidophorus sexlineatus*					U	U								S, F
Southeastern five-lined skink	*Eumeces inexpectatus*			U	U		U	U							SM, F
Ground skink	*Leiolopisma laterale*			U					U		U				S, SM
Black racer	*Coluber constrictor*			U		U	U				U				S, F
Florida water snake	*Natrix fasciata pictiventris*												U		S
Yellow rat snake	*Elaphe obsoleta quadrivittata*			U											SM
Eastern indigo snake	*Drymarchon corais couperi*						U		U						S, F
Florida cottonmouth	*Agkistrodon piscivorous*													U	SM
E. Diamondback rattlesnake	*Crotalus adamanteus*			U											F
Dusky pygmy rattlesnake	*Sistrurus miliarius barbouri*	U													F

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Common Name	Scientific Name	Onsite Habitat in Which Observed													Season Observed†
		Imp. Pasture	Wet Prairie	Pine Flatwoods	Palmetto Rangeland	Sand Pine	Xeric Oak Hammock	Woodland Pasture	Live Oak Hammock	Open Water/Ditches	Mixed Hardwood	Freshwater Marsh	Shrub Swamp	Other*	
Birds															
Pied-billed grebe	*Podilymbus podiceps*									U					F
American anhinga	*Anhinga anhinga*									U	U	U			S, F
Common gallinule	*Gallinula chloropus*											U	U		S
Great blue heron	*Ardea herodias*										U	U	U		S, SM, F
Little blue heron	*Egretta caerulea*									U	U	U	U		S, SM, F
Tricolored heron	*Egretta tricolor*									U	U	U			SM, F
Snowy egret	*Egretta thula*										U	U	U		S, SM, F
Great egret	*Casmerodius albus*			U						U	U	U	U		S, SM, F
Cattle egret	*Bubulcus ibis*	U			U	U		U	U			U			S, SM, F
Black-crowned night heron	*Nycticorax nycticorax*										U				F
Yellow-crowned night heron	*Nyctanassa violacea*										U				S, SM, F
Green heron	*Butorides striatus*										U	U	U		S, SM, F
American bittern	*Botaurus lentiginosus*										U	U			F
Roseate spoonbill	*Ajaia ajaja*													U	SM
Wood stork	*Mycteria americana*	U			U					U	U	U	U		S, SM, F
Florida sandhill crane	*Grus canadensis pratensis*	U		U	U		U	U			U	U			S, SM, F
Glossy ibis	*Plegadis falcinellus*									U			U		S
White ibis	*Eudocimus albus*	U									U	U	U		S, SM, F
Killdeer	*Charadrius vociferous*	U		U			U					U			S, SM, F
Common snipe	*Capella gallinago*	U										U			F
Greater yellowlegs	*Tringa melanoleuca*											U			S
Wild turkey	*Meleagris gallopavo*	U			U		U		U		U	U			S, SM, F
Common bobwhite	*Colinus virginianus*	U		U	U	U	U	U			U				S, SM, F
Northern harrier	*Circus cyaneus*	U	U	U						U		U			S, SM, F
Sharp-shinned hawk	*Accipiter striatus*	U		U					U						F
Red-tailed hawk	*Buteo jamaicensis*	U		U	U	U	U				U	U			S, SM, F
Red-shouldered hawk	*Buteo lineatus*	U		U	U	U	U				U	U	U		S, SM, F
Bald eagle	*Haliaeetus leucocephalus*	U									U				S, F
American kestrel	*Falco sparverius*	U		U	U			U						U	F
Osprey	*Pandion haliaetus*	U													S, F

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Common Name	Scientific Name	Onsite Habitat in Which Observed													Season Observed†
		Imp. Pasture	Wet Prairie	Pine Flatwoods	Palmetto Rangeland	Sand Pine	Xeric Oak Hammock	Woodland Pasture	Live Oak Hammock	Open Water/Ditches	Mixed Hardwood	Freshwater Marsh	Shrub Swamp	Other*	
Swallow-tailed kite	*Elanoides forficatus*			U			U				U				S, SM
Turkey vulture	*Cathartes aura*	U		U			U		U		U				S, SM, F
Black vulture	*Coragyps atratus*	U		U	U		U		U		U	U	U		S, SM, F
Great horned owl	*Bubo virginianus*								U						S
Barred owl	*Strix varia*			U					U		U				S, SM, F
Burrowing owl	*Speotyto cunicularia*	U													S, SM, F
Pigeon (Rock dove)	*Columba livia*	U													F
Mourning dove	*Zenaida macroura*			U		U	U	U	U		U				S, SM, F
Ground dove	*Columbina passerina*			U	U				U		U				S, SM
Cockatiel	*Nymphicus hollandicus*			U											SM
Yellow-billed cuckoo	*Coccyzus americanus*			U					U		U				S, SM, F
Common nighthawk	*Chordeiles minor*			U		U	U		U			U			S, SM
Chuck-will's-widow	*Caprimulgus carolinensis*			U					U		U				S, F
Belted kingfisher	*Ceryle alcyon*										U				F
Red-headed woodpecker	*Melanerpes erythrocephalus*			U									U		S, SM, F
Pileated woodpecker	*Dryocopus pileatus*			U	U	U	U		U		U				S, SM, F
Yellow-shafted flicker	*Colaptes auratus*			U					U		U				S, SM, F
Red-bellied woodpecker	*Melanerpes carolinus*			U	U	U	U	U	U		U				S, SM, F
Yellow-bellied sapsucker	*Sphyrapicus varius*			U											SM
Downy woodpecker	*Picoides pubescens*			U			U		U		U				S, SM, F
Hairy woodpecker	*Picoides villosus*			U					U		U		U		S, F
Red-cockaded woodpecker	*Picoides borealis*			U											SM, F
Eastern kingbird	*Tyrannus tyrannus*			U	U										SM
Great-crested flycatcher	*Myiarchus crinitus*	U		U		U	U		U		U		U		S, SM, F
Eastern phoebe	*Sayornis phoebe*			U					U		U		U		S, F
Tree swallow	*Iridoprocne bicolor*	U		U											S, SM
Chimney swift	*Chaetura pelagica*	U					U								S
Barn swallow	*Hirundo rustica*	U													F
Common crow	*Corvus brachyrhynchos*	U		U	U		U	U	U		U				S, SM, F
Blue jay	*Cyanocitta cristata*	U		U		U	U		U		U	U		U	S, SM, F
Carolina chickadee	*Parus carolinensis*			U							U				S

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Common Name	Scientific Name	Onsite Habitat in Which Observed													Season Observed†
		Imp. Pasture	Wet Prairie	Pine Flatwoods	Palmetto Rangeland	Sand Pine	Xeric Oak Hammock	Woodland Pasture	Live Oak Hammock	Open Water/Ditches	Mixed Hardwood	Freshwater Marsh	Shrub Swamp	Other*	
Tufted titmouse	*Parus bicolor*			U		U	U	U	U		U		U		S, SM, F
Carolina wren	*Thryothorus ludovicianus*			U		U	U		U		U		U		S, SM, F
Blue-gray gnatcatcher	*Polioptila caerulea*			U			U		U		U		U		S, SM, F
Brown thrasher	*Toxostoma rufum*			U		U	U		U						S, SM, F
Gray catbird	*Dumetella carolinensis*			U		U	U		U		U				S, F
Northern mockingbird	*Mimus polyglottos*	U		U	U	U	U	U	U				U		S, SM, F
Eastern bluebird	*Sialia sialis*	U		U	U		U		U						S, SM, F
Loggerhead shrike	*Lanius ludovicianus*	U		U	U			U							S, SM, F
White-eyed vireo	*Vireo griseus*			U	U	U	U		U		U		U		S, SM, F
Northern parula	*Parula americana*			U		U	U		U		U	U	U		S, SM
Yellow-throated warbler	*Dendroica dominica*							U	U						SM, F
Black and white warbler	*Mniotilta varia*						U		U		U				S, SM, F
American redstart	*Setophaga ruticilla*			U								U			S
Pine warbler	*Dendroica pinus*			U		U	U		U		U				S, SM, F
Prairie warbler	*Dendroica discolor*						U								SM
Palm warbler	*Dendroica palmarum*	U		U		U	U		U						S, F
Common yellowthroat	*Geothlypis trichas*			U	U		U		U		U	U	U		S, SM, F
Red-winged blackbird	*Agelaius phoeniceus*	U		U			U					U	U		S, SM, F
Common grackle	*Quiscalus quiscula*			U					U			U			S, SM, F
Boat-tailed grackle	*Quiscalus major*			U						U		U		U	S, SM, F
Eastern meadowlark	*Sturnella magna*	U		U	U		U	U				U			S, SM, F
Starling	*Sturnus vulgaris*	U		U	U										S, F
Summer tanager	*Piranga rubra*			U		U			U		U		U		S, SM
Northern cardinal	*Cardinalis cardinalis*			U		U	U	U	U		U		U		S, SM, F
Rufous-sided towhee	*Pipilo erythrophthalmus*			U	U	U	U		U		U				S, SM, F
Song sparrow	*Melospiza melodia*	U		U											S, F
Savannah sparrow	*Passerculus sandwichensis*	U													F
Bachman's sparrow	*Aimophila aestivalis*			U	U	U	U								S, SM

Table 3.3-1 Wildlife Observed on the IMC Ona Mine Site

Common Name	Scientific Name	Onsite Habitat in Which Observed													Season Observed†
		Imp. Pasture	Wet Prairie	Pine Flatwoods	Palmetto Rangeland	Sand Pine	Xeric Oak Hammock	Woodland Pasture	Live Oak Hammock	Open Water/Ditches	Mixed Hardwood	Freshwater Marsh	Shrub Swamp	Other*	
Mammals															
Opossum	*Didelphis virginiana*						U		U						S
Round-tailed muskrat	*Neofiber alleni*											U			S, F
Raccoon	*Procyon lotor*				U	U	U	U		U	U		U		S, SM, F
River otter	*Lutra canadensis*									U					F
Striped skunk	*Mephitis mephitis*			U		U	U								S, F
Gray fox	*Urocyon cinereoargenteus*								U		U				SM, F
Coyote	*Canis latrans*	U		U			U		U						S, F
Florida panther	*Felis concolor coryi*										U			U	S, F
Bobcat	*Felis rufus*			U	U	U	U				U	U		U	S, SM, F
Eastern gray squirrel	*Sciurus carolinensis*	U		U		U	U	U			U				S, SM, F
Sherman's fox squirrel	*Sciurus niger shermani*	U		U			U	U	U						S, SM, F
Cotton mouse	*Peromyscus gossypinus*			U	U	U	U		U						S
Florida mouse	*Podomys floridanus*					U	U		U						S
Hispid cotton rat	*Sigmodon hispidus*			U	U				U						S
Eastern cottontail	*Sylvilagus floridanus*	U		U		U	U	U	U						S, SM, F
Marsh rabbit	*Sylvilagus palustris*											U			S
Feral hog	*Sus scrofa*			U			U		U		U	U	U		S, SM, F
White-tailed deer	*Odocoileus virginianus*	U		U	U	U	U		U	U	U	U		U	S, SM, F
Nine-banded armadillo	*Dasypus novemcinctus*	U		U			U		U		U			U	S, SM, F

*Other species observed flying over site or along adjacent roads/habitats.
†Season observed: S = spring 1998.
SM = summer 1998.
F = fall 1998.
Source: IMC, 2002.

DRAFT

Table 3.3-2 - Small Mammal Trapping Species and Numbers Captured

Common Name	Scientific Name	Number Captured
Florida Mouse	*Podomys floridanus*	26
Cotton Mouse	*Peromyscus gossypinus*	75
Hispid Cotton Rat	*Sigmodon hispidus*	18
Opossum (juvenile)	*Didelphis virginiana*	1
Eastern Cottontail (juvenile)	*Sylvilagus floridanus*	1

Source: IMC, 2002.

Table 3.3-3 - Wading Bird Nesting Sites Identified

Location	Description
T34S, R24E, SE 1/4 S19 (GPS Point 41)	Approximately 30+ great egret and 8 great blue heron nests. Some white ibis roosting, also.
T34S, R23E, SW 1/4 S36 (GPS Point 32)	Approximately 50 nests of great egret, little blue herons, and snowy egrets. White ibis roosting, possibly nesting.

Source: IMC, 2002.

Table 3.3-4 - Pit Trapping Effort

Common Name	Scientific Name	Number Captured
Six-lined Racerunner	*Cnemidophorus sexlineatus*	1
Gopher Tortoise	*Gopherus polyphemus*	4
Eastern Narrow-mouthed Toad	*Gastrophryne carolinensis*	2
Greenhouse frog	*Eleutherodactylus planirostris*	1
Gopher frog	*Rana capito*	3

Source: IMC, 2002.

TABLE 3.3-5 Phytoplankton Collected From The Mississippi Chemical Corporation Site April 1980

Taxa	Brushy Creek			Oak Creek		
	B-1[a]	B-2	B-3	O-1	O-2	O-3
Cyanophyta	0.3	2.0	2.7	0.2	--	18.5
Cyanophycaea						
Anabaena sp.	--	1.1	1.6	--	--	18.5
Calothrix sp.	--	0.8	0.9	0.2	--	--
Closteridium sp.	--	--	0.2	--	--	--
Spirulina sp.	0.3	0.1	--	--	--	--
Chlorophyta	7.8	20.0	6.1	7.7	6.2	96.9
Clorophyceae						
Ankistrodesmus sp.	--	2.2	0.2	0.3	0.1	--
Characium sp.	--	--	--	--	--	4.6
Chlamydomonas sp.	--	--	0.2	0.5	--	--
Chlorella sp.	--	--	--	1.5	1.8	5.4
Chlorococcum spp.	2.4	--	0.3	--	--	--
Chlorococcales	--	--	--	--	--	20.6
Closterium sp.	1.2	0.4	0.4	--	0.1	--
Cosmarium sp.	0.9	0.3	--	0.2	0.8	2.3
Crucigenia sp.	--	--	--	0.2	--	--
Mougeotia sp.	--	--	--	--	--	0.2
Oedogonium sp.	--	11.9	2.4	--	0.4	--
Oocystis sp.	--	--	--	--	--	10.8
Palmodictyon sp.	--	--	--	1.0	--	--
Pandorina sp.	--	0.2	--	--	--	1.5
Pediastrum sp.	0.9	0.2	--	--	--	--
Scenedesmus sp.	2.1	4.4	1.2	1.3	1.6	7.4
Staurastrum sp.	0.3	--	--	0.2	0.4	4.4
Tetraedron sp.	--	0.1	0.2	--	--	--
Volvox sp.	--	0.3	--	0.7	--	39.7
Unidentified chlorophyte	--	--	1.2	1.8	1.0	--
Euglenophyta	2.7	4.0	2.2	1.0	3.2	12.9
Euglenophyceae						
Euglena sp.	--	0.2	--	--	--	5.3
Phacus sp.	0.3	1.7	0.5	1.0	0.1	7.6
Trachelomonas sp.	--	--	--	--	0.4	--
Unidentified flagellate	2.4	2.1	1.7	--	2.7	--

Notes: [a] Data from one sample only. All other data points represent the average from two replicate samples.
Numbers are organisms/liter x 10^4

Source: USEPA, 1981.

TABLE 3.3-5 Phytoplankton Collected From The Mississippi Chemical Corporation Site April 1980

Taxa	Brushy Creek			Oak Creek		
	B-1[a]	B-2	B-3	O-1	O-2	O-3
Pyrrophyta	--	--	--	0.4	--	4.4
Dinophyceae						
Ceratium sp.	--	--	--	0.4	--	--
Gymnodinium sp.	--	--	--	--	--	4.4
Chrysophyta	57.9	22.0	30.6	6.3	12.7	70.8
Chrysophyceae						
Chrysococcus sp.	0.6	1.6	1.7	1.2	0.4	21.0
Bacillariophyceae						
Amphora sp.	1.6	--	--	--	--	--
Cocconeis sp.	--	--	0.5	--	--	--
Cyclotella sp.	8.3	2.5	4.4	0.2	0.7	--
Cymbella sp.	0.9	0.1	--	--	0.8	--
Diatoma sp. A	3.3	--	--	--	0.6	--
Diatoma sp. B	--	--	--	--	0.3	--
Diploneis sp.	--	0.4	--	--	--	--
Eunotia sp.	--	--	1.0	0.2	--	--
Fragilaria sp.	--	0.3	0.7	--	--	--
Gomphonema sp.	3.0	--	0.2	--	--	--
Gyrosigma sp.	--	0.3	0.5	0.2	0.1	--
Mastigloia sp.	0.6	--	--	--	--	--
Melosira sp.	8.6	1.2	2.3	--	1.1	4.4
Meridion sp.	--	0.3	0.2	--	0.1	--
Navicula sp. A	10.7	4.0	4.3	1.3	1.8	7.5
Navicula sp. B	6.8	2.9	3.3	0.5	1.3	--
Navicula sp. C	0.6	0.2	2.4	0.3	0.6	--
Navicula sp. D	--	0.3	0.5	--	--	--
Navicula sp. E	--	--	0.5	--	--	--
Navicula sp. F	--	--	0.2	--	--	--
Nitzschia sp. A	2.4	2.9	1.4	0.5	1.2	7.4
Nitzschia sp. B	0.9	0.6	0.6	0.4	0.4	5.3
Nitzschia sp. C	--	0.1	0.6	--	--	--
Nitzschia sp. D	--	--	0.2	--	--	--
Pinnularia sp. A	2.4	0.7	1.2	0.5	0.1	4.5
Pinnularia sp. B	2.7	0.4	0.6	--	--	4.4
Pinnularia sp. C	--	0.1	--	--	--	--

Notes: [a] Data from one sample only. All other data points represent the average from two replicate samples.
Numbers are organisms/liter x 10^4

Source: USEPA, 1981.

TABLE 3.3-5 Phytoplankton Collected From The Mississippi Chemical Corporation Site April 1980

Taxa	Brushy Creek			Oak Creek		
	B-1[a]	B-2	B-3	O-1	O-2	O-3
Stauroneis sp.	0.6	--	0.6	--	--	--
Synedra sp. A	3.3	1.6	2.5	0.5	1.5	13.3
Synedra sp. B	0.6	0.7	0.2	0.5	1.4	3.0
Synedra sp. C	--	0.8	--	--	0.3	--
Phytoplankton Density	68.7	48.0	41.6	15.6	22.1	203.5
Total Number of Taxa	27.0	36.0	37.0	25.0	28.0	23.0
Species Diversity (d)	3.43	3.82	4.00	3.89	3.85	3.86

Notes: [a] Data from one sample only. All other data points represent the average from two replicate samples.
Numbers are organisms/liter x 10^4

Source: USEPA, 1981.

Table 3.3-6 Summary of 1999 Phytoplankton Samples at IMC-Ona

Periphyton	ONA SW-1		ONA SW-2		ONA SW-3		ONA SW-4		ONA SW-7		ONA SW-8	
	Feb	July	Feb	July	Feb	July	Feb	July	Feb	July	Feb	July
Number of Taxa	27	25	30	22	23	31	20	78	34	23	31	30
Number of Cells per Square Centimeter	2,095	16,338	13,438	5,731	2,901	7,987	1,141	10,647	5,160	12,393	10,258	31,174
% Contribution of Dominant Taxon	85	45	58	56	50	40	56	50	50	52	53	41
Chlorophyll *a* (mg/m^3)	D	1.3	D	D	D	3.1	30	2.2	1.5	1.1	2.6	4.2
Diatom/Diatom+B-G Abundance Ratio	0.008	0.003	0.002	0.003	0.012	0.015	0.083	0.022	0.009	0.001	0.019	0.009
% Blue-green	97.8	99.0	99.3	98.2	98.3	97.7	64.4	92.4	96.1	98.5	94.9	98.6
% Green	0.9	0.6	0.1	1.4	0.1	0.8	0.0	4.1	2.1	0.9	1.7	0.1
% Diatoms	0.8	0.3	0.2	0.3	1.2	1.5	5.8	2.1	0.9	1.0	1.9	0.9

Note:
D - Undetected

Source: BRA 1999.

TABLE 3.3-7 Zooplankton Collected From The Mississippi Chemical Corporation Site April 1980[a]

Species	Brushy Creek			Oak Creek		
	B-1	B-2	B-3	O-1	O-2	O-3
Rotatoria	21.97	5.75	2.09	2.07	2.63	4.48
Asplanchna sp.	0.09	--	--	--	0.03	0.15
Brachionus angularis	--	--	--	--	0.05	0.07
B. calyciflorus	--	0.05	--	1.23	0.03	--
B. quadridentatus	--	0.03	0.05	--	--	0.05
Cephalodella sp.	0.34	0.03	--	--	0.08	0.05
Conochilus unicornis	0.09	--	0.03	--	0.12	0.38
Euchlanis sp.	8.33	0.24	0.03	0.10	--	--
Filinia longiseta	--	0.03	0.03	--	0.03	--
Hexarthra sp.	--	--	--	--	0.03	--
Kellicottia bostoniensis	--	--	--	--	--	0.10
Keratella cochlearis	--	--	0.08	--	--	0.05
K. quadrata	--	0.03	--	0.05	--	--
K. serrulata	--	0.05	--	--	--	--
Lecane luna	0.34	0.81	0.55	0.03	0.48	0.15
Lepadella sp.	0.50	0.43	0.24	0.10	0.38	--
Mytilina sp.	--	0.05	0.10	0.05	0.10	0.08
Monostyla bulla	0.67	0.57	0.41	0.10	0.22	0.07
Platyas patulus	0.09	0.31	0.03	--	0.08	0.15
P. quadricornus	0.42	0.34	0.10	0.03	0.10	1.62
Polyarthra sp.	1.00	0.93	0.17	0.08	0.43	0.86
Scaridium longicaudum	0.09	0.07	0.05	--	0.05	0.38
Synchaeta sp.	--	0.07	--	--	--	0.22
Testudinella sp.	0.17	0.22	0.12	0.10	0.17	0.07
Trichocerca elongata	1.42	0.48	0.10	--	0.15	--
Trichotria sp.	0.50	0.15	--	--	0.10	0.03
Unidentified rotifer[b]	7.92	0.86	--	0.20	--	--
Cladocera	1.43	0.24	0.45	0.18	0.28	0.38
Alona guttata	0.42	0.14	0.22	0.08	0.17	0.08
Alonella dadayi	0.17	--	0.05	0.10	--	--
Camptocercus rectirostris	--	--	0.03	--	0.03	--
Ceriodaphnia sp.	--	--	--	--	--	0.12
Chydorus sphaericus	0.58	0.05	0.10	--	0.08	0.15
Kurzia latissima	0.09	--	--	--	--	0.03
Leydigia quadrangularis	0.17	--	--	--	--	--
Grimaldina brazzai	--	0.05	0.05	--	--	--

Notes: [a]Values represent the average number of organisms/liter found in two replicate samples.

[b]Probably a member of the group Bdelloidea.

Source: USEPA, 1981.

TABLE 3.3-7 Zooplankton Collected From The Mississippi Chemical Corporation Site April 1980a

Species	Brushy Creek			Oak Creek		
	B-1	B-2	B-3	O-1	O-2	O-3
Copepoda	12.60	9.54	6.53	1.74	5.99	4.75
Eucyclops agilis	0.42	0.05	0.05	0.03	0.07	0.03
Macrocyclops albidus	0.33	--	0.03	--	--	--
Tropocyclops prasinus	0.09	0.08	--	--	0.03	0.10
Cyclopoid copepodite	2.67	0.55	0.45	0.13	0.55	0.57
Calanoid copepodite	0.17	--	--	--	--	0.03
Nauplii	8.92	8.86	6.00	1.58	5.34	4.02
Zooplankton Density	36.00	15.53	9.07	3.99	8.90	9.61
Total Number of Taxa[c]	23	25	22	14	23	23
Species Diversity (d)[c]	2.88	3.85	3.83	2.61	3.97	3.43

Notes: [a]Values represent the average number of organisms/liter found in two replicate samples.

[b]Probably a member of the group Bdelloidea.

[c]Does not include the immature copepod forms (nauplii, calanoid, and cyclopoid copepodites).

Source: USEPA, 1981.

TABLE 3.3-8 Benthic Macroinvertebrates Collected From Streams On The Mississippi Chemical Corporation Property April 1980[a]

Taxa	Brushy Creek			Oak Creek		
	B-1	B-2	B-3	O-1	O-2	O-3
Arthropoda						
Insecta						
Diptera						
Ablabesmyia sp.	26	13	16	13	9	29
Bezzia-Probezzia sp.	38	16	26	22	26	32
Ceratopogonidae	--	6	3	--	3	--
Chironominae	35	3	16	--	13	3
Chironomini	--	--	13	--	--	--
Chironomus sp.	--	--	13	6	86	303
Cladotanytarsus sp.	3	22	42	--	--	10
Coelotanypus sp.	48	--	51	--	29	22
Cricotopus sp.	6	--	--	--	--	--
Cryptochironomus sp.	19	32	51	16	--	--
Cryptocladopelma sp.	--	6	13	--	3	--
Dicrotendipes sp.	--	--	--	3	3	10
Einfeldia sp.	--	--	--	3	--	--
Harnischia sp.	3	--	--	3	6	--
Micropsectra sp.	3	25	115	--	--	--
Orthocladinae	3	--	--	--	--	--
Paralauterborniella sp.	3	--	13	--	--	--
Pentineurini	10	--	--	10	--	7
Polypedilum sp.	89	247	577	71	19	48
Procladius sp.	--	--	--	--	51	42
Psectrocladius sp.	--	--	13	--	--	--
Rheotanytarsus sp.	166	29	--	23	--	32
Simulidae	6	32	--	--	--	--
Tanypodinae	6	6	--	--	--	--
Tanypus sp.	--	--	--	--	--	3
Tanytarsini	16	--	13	--	6	16
Tanytarsus sp.	328	45	143	44	105	332
Tipulinae	--	--	13	--	--	--
Xenochironomus sp.	--	6	--	--	--	--
Unidentified dipteran sp.	3	--	--	7	--	3

Notes: [a]Values represent the average species density/m^2 from duplicate Ponar grab samples taken along both stream banks and in the center of the stream.

Source: USEPA, 1981.

TABLE 3.3-8 Benthic Macroinvertebrates Collected From Streams On The Mississippi Chemical Corporation Property April 1980[a]

Taxa	Brushy Creek			Oak Creek		
	B-1	B-2	B-3	O-1	O-2	O-3
Ephemeroptera						
Baetis sp.	--	35	--	--	3	3
Caenis sp.	190	--	13	3	152	3
Siphlonurus sp.	--	--	--	--	--	3
Trichoptera						
Cheumatopsyche sp.	26	3	--	16	--	--
Hydropsyche sp.	--	6	--	--	--	--
Hydropsychidae	--	--	3	3	--	--
Oecetis sp.	13	6	13	--	--	--
Oxyethira sp.	3	--	--	--	--	--
Lepidoptera						
Paragyractis sp.	16	--	--	--	--	--
Parapoynx sp.	3	--	--	--	--	--
Odonata						
Gomphus sp.	--	6	--	--	--	--
Macromia sp.	--	3	3	--	--	--
Macrothemis sp.	--	--	--	--	6	--
Nehalennia sp.	16	3	13	--	--	--
Pachydiplax longipennis	--	--	--	--	7	--
Perithemis sp.	--	--	--	--	19	3
Tetragoneuria sp.	--	--	6	--	--	--
Coleoptera						
Dytiscidae	--	--	--	--	--	3
Elimini sp.	7	--	--	--	--	--
Haliplidae	--	--	3	--	--	--
Collembola	3	--	--	3	3	3

Notes: [a]Values represent the average species density/m^2 from duplicate Ponar grab samples taken along both stream banks and in the center of the stream.

Source: USEPA, 1981.

TABLE 3.3-8 Benthic Macroinvertebrates Collected From Streams On The Mississippi Chemical Corporation Property April 1980[a]

Taxa	Brushy Creek			Oak Creek		
	B-1	B-2	B-3	O-1	O-2	O-3
Crustacea						
Amphipoda						
Hyalella azteca	1655	102	60	45	89	105
Isopoda						
Asellus sp.	--	--	--	127	--	--
Decapoda						
Palaemonetes poludosus	--	6	86	3	29	--
Cnidaria						
Hydra sp.	13	--	13	--	--	--
Nematoda	147	6	25	--	3	13
Annelida						
Oligochaeta						
Aulophorus sp.	--	--	--	--	--	3
Dero sp.	249	6	628	54	111	102
Limnodrilus hoffmeisteri	64	80	252	207	258	13
Limnodrilus sp.	2312	160	367	787	1387	90
Lumbriculidae	93	13	48	68	48	6
Naididae	--	--	--	3	--	7
Slavina sp.	3	--	--	41	--	--
Stylaria sp.	--	--	--	3	--	--
Immature tubificids	2216	542	670	169	169	163
Hirudinea						
Unidentified sp.	41	6	51	57	93	16

Notes: [a]Values represent the average species density/m^2 from duplicate Ponar grab samples taken along both stream banks and in the center of the stream.

Source: USEPA, 1981.

TABLE 3.3-8 Benthic Macroinvertebrates Collected From Streams On The Mississippi Chemical Corporation Property April 1980[a]

	Brushy Creek			Oak Creek		
Taxa	**B-1**	**B-2**	**B-3**	**O-1**	**O-2**	**O-3**
Mollusca						
Bivalvia						
Corbicula sp.	--	10	--	--	--	--
Sphaeriidae	10	38	447	529	1486	708
Unionaceae	--	3	3	--	--	--
Gastropoda						
Ferrisia	188	86	13	3	549	3
Pleuroceridae	51	--	16	--	--	--
Pomacea	--	6	--	--	6	--
Unidentified gastropod	7	--	3	6	61	7
Macroinvertebrate Density	8137	1614	3867	2348	4838	2161
Diversity (d)	2.9	3.5	3.7	3.2	3.1	3.4
Equitability (e)	0.28	0.65	0.53	0.40	0.37	0.41

Notes: [a]Values represent the average species density/m^2 from duplicate Ponar grab samples taken along both stream banks and in the center of the stream.

Source: USEPA, 1981.

Table 3.3-9 Summary of 1999 Hester-Dendy Macroinvertebrate Sampling at IMC-Ona

Hester-Dendy Samples (Qualitative)	ONA SW-1		ONA SW-2		ONA SW-3		ONA SW-4		ONA SW-7		ONA SW-8	
Month of Incubation	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**
Number of Taxa	42	5	29	10	42	8	19	13	30	8	23	13
Number of Individuals	419	23	129	94	256	12	92	155	130	20	82	153
Florida Index	27	0	9	7	28	3	4	4	13	2	5	0
Shannon-Weaver Diversity (Base 2)	3.89	1,47	3.85	2.01	4.09	2.86	3.50	2.73	3.75	2.07	3.93	1.65
% Contribution of Dominant Taxon	24	65	29	44	24	25	22	28	20	60	15	71
EPT Index	9	0	10	2	12	3	1	2	7	0	6	0
# Crustaceans / Mollusks	4	3	3	1	2	1	4	2	4	5	3	5
% Crustaceans / Mollusks	3.6	91.3	10.9	16.0	1.6	25.0	20.7	25.2	22.3	80.0	19.5	87.6
% Oligochaeta	0.2	0.0	0.0	0.0	1.2	0.0	5.4	0.0	0.0	5.0	2.4	0.0
% Diptera	61.8	4.4	30.2	6.4	69.5	0.0	70.7	40.0	48.5	0.0	51.2	8.49
% Ephemeroptera	14.8	0.0	48.8	75.5	10.2	16.7	2.2	19.4	22.3	0.0	13.4	0.0
% Trichoptera	12.2	0.0	7.8	0.0	8.6	16.7	0.0	13.6	3.8	0.0	7.3	0.0
% Odonata	0.5	0.0	0.0	0.0	0.4	0.0	0.0	0.7	0.0	5.0	1.2	0.0
% Coleoptera	3.8	0.0	2.3	0.0	5.9	25.0	1.1	0.0	2.3	0.0	3.7	0.7
% Other	3.1	4.4	0.0	2.1	2.6	16.7	0.0	1.26	0.8	10.0	1.3	3.3
% Predators	4.8	4.4	2.3	5.3	12.5	16.7	3.3	24.5	23.1	15.0	14.6	3.9
% Collectors-Gatherers	20.5	4.4	22.5	33.0	4.7	0.0	41.3	29.7	26.2	10.0	28.1	8.5
% Collectors-Filterers	32.7	65.2	23.3	17.0	53.9	16.7	45.7	7.1	23.1	15.0	45.1	15.0
% Scrapers	12.9	26.1	41.9	43.6	10.2	41.7	3.3	38.1	19.2	60.0	6.1	71.9
% Shredders	2.6	0.0	7.8	1.1	14.1	0.0	5.4	0.0	6.9	0.0	1.2	0.0

Notes:
N – Not Impaired
S - Suspect
Source: BRA 1999.

Table 3.3-10 Summary of 1999 Dip Net "20 Sweeps" Macroinvertebrate Sampling at IMC-Ona

Dip Net Samples (Qualitative)	ONA SW-1		ONA SW-2		ONA SW-3		ONA SW-4		ONA SW-7		ONA SW-8	
Month of Incubation	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**	**Feb**	**July**
Number of Taxa	25	10	53	29	30	16	33	30	37	15	40	27
Number of Individuals	588	192	1278	124	684	97	282	538	334	720	834	736
Florida Index	12	2	25	15	18	4	5	6	16	2	5	4
Shannon-Weaver Diversity (Base 2)	2.66	1.37	5.01	3.40	3.80	1.94	4.76	4.33	3.76	2.29	4.69	3.40
% Contribution of Dominant Taxon	55	77	11	47	25	69	9	14	39	58	17	38
EPT Index	4	2	10	6	4	5	2	3	5	2	2	2
Florida Stream Condition Index	25 (G)	19 (P)	27 (VG)	29 (VG)	29 (VG)	23 (G)	23 (G)	25 (G)	25 (G)	21 (G)	23 (G)	25 (G)
# Crustaceans + Mollusks	2	6	4	4	2	3	4	7	4	6	7	8
% Crustaceans / Mollusks	65.8	95.8	13.2	52.1	21.1	74.2	10.6	32.7	3.0	73.3	11.5	72.8
% Oligochaeta	0.5	0.0	4.7	11.3	0.0	4.1	10.6	8.0	16.8	2.2	8.6	3.3
% Diptera	12.8	0.0	42.3	12.9	42.1	1.0	59.6	9.9	34.1	2.2	64.8	7.6
% Ephemeroptera	1.5	1.0	9.4	5.7	3.5	5.2	1.1	11.9	39.5	11.1	5.8	2.2
% Trichoptera	8.2	1.0	14.1	4.0	25.4	9.3	2.1	3.0	2.4	1.1	0.0	0.0
% Odonata	3.6	1.0	4.2	8.1	0.5	1.0	0.0	22.7	0.6	8.6	2.2	12.0
% Coleoptera	7.7	1.0	11.7	4.0	3.3	4.1	10.6	8.9	2.4	1.1	6.5	0.0
% Other	0.0	0.0	0.4	1.9	4.1	1.0	5.4	2.9	1.2	0.3	0.6	2.2
% Predators	9.7	1.0	10.8	15.3	12.3	3.1	23.4	36.7	13.8	12.2	19.4	19.6
% Collectors-Gatherers	1.5	0.0	19.2	21.8	8.8	7.2	29.8	46.8	66.5	25.6	23.0	25.0
% Collectors-Filterers	62.8	87.5	47.0	58.9	55.3	82.5	33.0	6.9	10.8	60.0	48.2	54.4
% Scrapers	12.2	10.4	2.3	0.0	1.8	3.1	0.0	3.9	0.0	1.1	1.4	1.1
% Shredders	6.6	0.0	9.9	0	17.5	1.0	6.4	2.8	6.00	0.0	4.3	0.0

Notes:
SCI Categories
P – Poor
G – Good
VG – Very Good
Source: BRA 1999.

TABLE 3.3-11 Fish Collected In Brushy and Oak Creeks On The Mississippi Chemical Corportaion Property In April 1980[a]

Family Common Name	Scientific Name	Brushy Creek			Oak Creek		
		B-1	B-2	B-3	O-1	O-2	O-3
Lepisosteidae							
Florida gar	Lepisosteus platyrhincus	--	4	--	--	1	--
Alligator gar	L. spatula	--	7	1	--	1	1
Amiidae							
Bowfin	Amia calva	--	8	1	--	5	4
Cyprinidae							
Golden shiner	Notemigonus crysoleucas	2	1	1	--	--	--
Ironcolor shiner	Notropis chalybaeus	1	--	15	--	--	--
Taillight shiner	N. maculatus	2	--	--	--	--	--
Unidentified shiner	Notropis sp.	6	--	--	--	--	--
Catostomidae							
Lake chubsucker	Erimyzon sucetta	--	--	1	--	1	--
Ictaluridae							
Yellow bullhead	Ictalurus natalis	--	33	9	--	3	2
Brown bullhead	I. nebulosus	--	--	--	--	20	2
Tadpole madtom	Noturus gyrinus	--	--	1	--	--	--
Clariidae							
Walking catfish	Clarias batrachus	--	--	1	--	--	--
Cyprinodontidae							
Golden topminnow	Fundulus chrysotus	1	--	3	--	--	--
Seminole killifish	F. seminolis	--	1	--	10	--	2
Flagfish	Jordanella floridae	1	--	1	--	1	--
Bluefin killifish	Lucania goodei	1	--	--	--	1	--
Poeciliidae							
Mosquitofish	Gambusia affinis	25	857	68	31	178	464
Least killifish	Heterandria formosa	42	571	40	7	10	122
Sailfin molly	Poecilia latipinna	2	3	--	--	--	4
Atherinidae							
Brook silverside	Labidesthes sicculus	1	--	--	--	--	--
Centrarchidae							
Banded pygmy sunfish	Elassoma zonatum	--	--	--	--	--	3
Bluespotted pygmy sunfish	Elnneacanthus gloriosus	1	--	--	--	--	--
Warmouth	Lepomis gulosus	--	5	4	--	--	13
Bluegill	L. macrochirus	--	1	1	--	1	--
Redear sunfish	L. microlophus	--	1	--	--	1	--
Spotted sunfish	L. punctatus	--	--	1	--	1	--
Immature sunfish	Lepomis sp.	1	--	1	--	--	--
Largemouth bass	Micropterus salmoides	1	1	1	--	3	--
Percidae							
Brown darter	Etheostoma edwini	--	--	--	--	--	1
Swamp darter	E. fusiforme	1	--	1	--	--	--
Total		88	1493	151	48	227	618

Note: [a]Includes fish captured by seining and gill netting.

Source: USEPA, 1981.

Table 3.4-1 - Potential for Occurrence of State and Regionally Significant Listed Plant Species on the IMC Company Ona Mine Development of Regional Impact

Scientific Name	Common Name	Designated Status[1]			Habitat Preference	Potential Habitat Onsite	Likelihood of Species Occurrence Onsite[2]
		DCA	FDA	USFWS			
Asclepias curtissii	Curtiss' milkweed	R	E		Scrub, scrubby flatwoods, xeric hammock	Xeric oak	Low
Chionanthus pygmaeus	Pygmy fringetree	R	E	E	Scrub, sandhill, xeric hammock	Xeric oak	Low
Chrysopsis floridana	Florida golden aster	CI	E	E	Scrub	Xeric oak	Low
Drosera intermedia	Water sundew	R	T		Seepage slope, wet flatwoods, depression marsh, sinkhole lake edges, seepage stream banks	Open wetlands	Low
Encyclia tampense	Butterfly orchid		T		Hammocks, swamps	Hammocks, swamps	Present
Epidendrum conopseum	Green-fly orchid		T		Hammocks	Hammocks	Moderate
Eugenia confusa	Redberry Ironwood	R	E		Rockland hammock	None	Very low
Hartwrightia floridana	Florida Hartwrightia	I	T		Mesic flatwoods, wet flatwoods, bog, seepage slope, baygall	Pine flatwoods, palmetto rangeland, marsh	Low
Justicia crassifolia	Thick-leaved water willow	I	E		Mesic flatwoods, dune swamp, seepage slope	Mixed hardwood swamp	Low
Lechea cernua	Nodding pinweed	R	T		Scrub	Xeric oak	Present
Lilium catesbaei	Southern red lily	R	T		Mesic flatwoods, wet prairie, wet flatwoods, seepage slope	Pine flatwoods, palmetto rangeland	High
Lythrum flagellare	Lowland loosestrife		E		Wet prairies	Wet pasture, wet prairie, ditches	Moderate
Nephrolepis biserrata	Giant sword fern		T		Swamps, hydric hammock	Swamps, hydric hammock	Moderate
Nolina brittoniana	Scrub beargrass	I	E	E	Scrub, sandhill	Xeric oak	Low
Osmunda cinnamomea	Cinnamon fern		CE		Swamps, seeps	Swamps	Present
Osmunda regalis var. spectabilis	Royal fern		CE		Swamps	Swamps	Present
Pinguicula caerulea	Blue-flowered butterwort		T		Flatwoods, bogs	Flatwoods	High
Pinguicula lutea	Yellow-flowered butterwort		T		Flatwoods, bogs	Flatwoods	High
Platananthera ciliaris	Yellow-fringed orchid		T		Bogs, wet flatwoods	Wet flatwoods	Low
Polygonella myriophylla	Small's jointweed	R	E	E	Scrub	Xeric oak	Low
Pteroglossaspis ecristata (= Eulophia ecristata)	Wild coco	I	T		Pine rockland, upland hardwood forest, scrubby flatwoods, mesic flatwoods	Xeric oak, palmetto rangeland, pine flatwoods	Present
Rhapidophyllum hystrix	Needle palm		CE		Hydric hammock	Hydric hammock	Moderate
Stenorrhynchos lanceolatus	Leafless beaked orchid		T		Flatwoods, oak hammocks, disturbed sites	Pastures, road shoulders	Present
Thelypteris serrata	Toothed lattice-vein fern		E		Cypress swamps	Cypress swamps	Low
Tillandsia fasciculata	Cardinal air plant		E		Cypress swamps, hammocks	Swamps, hammocks	Present
Tillandsia utriculata	Giant air plant		E		Hammocks, swamps	Hammocks, swamps	Present
Zamia pumila	Coontie		CE		Swamp hammocks, pineland	Swamp hammocks, pineland	Moderate
Zephyranthes atamasco	Rainlily		T		Flatwoods	Flatwoods	Moderate
Zephyranthes simpsonii	Simpson's Zephyr lily	R	T		Dune swamp, wet flatwoods, wet pastures	Pine flatwoods, wet pasture	Moderate

Notes:

1. Designated status derived from the Florida Fish & Wildlife Conservation Commission, Florida's Endangered Species, Threatened Species, and Species of Special Concern, 1 August 1997, and the Department of Community Affairs 9J-2.041, Florida Administrative Code (May 1994).
   DCA = Department of Community Affairs
   FDA = Florida Department of Agriculture
   USFWS = United States Fish and Wildlife Service
   E = Endangered
   T = Threatened
   R = Rare
   I = Imperiled
   CE = Commercially exploited
   CI = Critically imperiled
2. Very low; preferred habitat does not exist onsite.
   Low: preferred habitat exists onsite but species is very rare in the region.
   Moderate: preferred habitat exists onsite and the plant is more frequently encountered in the region than the other species listed.
   High: preferred habitat exists onsite and the plant has been reported in proximity to the mine site.
   Present: the plant has been observed on the mine site.

Source: IMC,2002.

Table 3.4-2 - Listed Wildlife Species Potentially Occurring on the IMC Ona Mine Site

Scientific Name	Common Name	Designated Status[1] FGFWFC	Designated Status[1] USFWS	Habitat Preference	Potential Habitat Onsite	Breeding/Nesting Season[2] Winter J	Winter F	Spring M	Spring A	Spring M	Summer J	Summer J	Summer A	Fall S	Fall O	Fall N	Winter D
Amphibians and Reptiles																	
Alligator mississippiensis	American alligator[3]	SCC	T(S/A)	Ponds, lakes, rivers, and interior of swamps and freshwater marshes	Marsh, hardwood swamp, shrub swamp			X	X	X	X						
Drymarchon corais couperi	Eastern indigo snake[3]	T	T	Hardwood swamps, pine flatwoods, and sandhill communities	Pine flatwoods, sand pine, xeric oak, oak hammock	X	X	X	X							X	X
Pituophus melanoleucus	Florida pine snake[3]	SSC	UR2	Longleaf pine/turkey oak and sandhill communi-ties	Pine flatwoods, sand pine						X	X	X	X			
Rana capito	Gopher frog[3]	SSC	UR2	Pinelands, scrub, and freshwater marshes for breeding	Pine flatwoods, sand pine, xeric oak, oak hammock				X	X	X	X					
Gopherus polyphemus	Gopher tortoise[3]	SSC	UR2	Pinelands, sand pine scrub, xeric oak, and sandhill communities	Pine flatwoods, sand pine, xeric oak, oak hammock				X	X	X						
Stilosoma extenuatum	Short-tailed snake	T	__	Sandhill	Sand pine, xeric oak												
Birds																	
Haliaeetus l. leucocephalus	Bald eagle	T	E	Riparian habitats, marshes, and dry prai-ries with isolated marshes	Hardwood swamp, pine flatwoods	X	X	X								X	X
Falco peregrinus tundrius	Arctic peregrine falcon	E	T	Coastal areas, marshes, flooded farm fields, roosts in solitary trees or snags	Marshes, flooded farm fields												
Polyborus plancus audubonii	Audubon's crested caracara	T	T	Dry prairies with scat-tered cabbage palms and improved pasture	Palmetto range, im-proved pasture	X	X	X									
Speotyto cunicularia	Burrowing owl	SSC	—	Prairies, sandhills, pas-tures, prairie-like ex-panses of airports, and industrial parks and campuses	Improved pasture	X	X	X	X							X	X
Grus canadensis pratensis	Florida sandhill crane[3]	T	—	Wet prairies, marshy lake margins, improved cattle pastures, sparsely vegetated marshes, and shallow flooded open areas	Wet pasture, improved pasture, marsh		X	X	X								
Aphelocoma coerulescens coerulescens	Florida scrub jay	T	T	Sand pine scrub and pine/xeric oak communi-ties	Sand pine, xeric oak			X	X	X	X						

Spring Sampling 1998

Summer Sampling 1998

Fall Sampling 1998

Table 3.4-2 - Listed Wildlife Species Potentially Occurring on the IMC Ona Mine Site

Scientific Name	Common Name	Designated Status[1]		Habitat Preference	Potential Habitat Onsite	Breeding/Nesting Season[2]											
						Win-ter		Spring			Summer			Fall			Win-ter
		FGFWFC	USFWS			J	F	M	A	M	J	J	A	S	O	N	D
Picoides borealis	Red-cockaded wood-pecker	T	E	Pine flatwoods, longleaf pine/oaks, and mixed hardwood and pine	Pine flatwoods				X	X	X						
Egretta caerulea	Little blue heron[3]	SSC	—	Shallow marshes, edges of swamps or ponds, flooded ditches, and stream banks	Marsh, hardwood swamp, shrub swamp		X	X	X	X	X						
Aramus guarauna	Limpkin	SSC	—	Slow-moving freshwater rivers and streams, marshes, and lake shores	Hardwood swamp	X	X	X	X	X	X	X					X
Eudocimus albus	White ibis[3]	SSC	—	Lakes, marshes, and waterways	Marsh, hardwood swamp, wet pasture		X	X	X								
Egretta thula	Snowy egret[3]	SSC	—	Shallow marshes, edges of swamps or ponds, flooded ditches, and stream banks	Marsh, hardwood swamp, wet pasture			X	X	X	X	X					
Falco sparverius paulus	Southeastern Ameri-can kestrel[3]	T	UR2	Open pine forests and clearings with dead trees, open edges, and river bottoms	Pine flatwoods, im-proved pasture, wet pas-ture			X	X	X							
Egretta tricolor	Tricolored heron[3]	SSC	—	Shallow marshes, edges of swamps or ponds, flooded ditches, and stream banks	Marsh, hardwood swamp, shrub swamp			X	X	X							
Mycteria americana	Wood stork[3]	E	E	Freshwater and brackish wetlands	Hardwood swamp, marsh	X	X	X									X
Ajaia ajaja	Roseate spoonbill	SSC	—	Primarily mangrove for-ests, but disperse to inland wetlands	Marshes												
Ammodramus savannarum floridanus	Florida grasshopper sparrow	E	E	Open pastures, dry prai-ries	Open pastures, dry prai-ries				X	X	X						
Mammals																	
Podomys floridanus	Florida mouse	SSC	UR2	Sand pine scrub, long-leaf pine/turkey oak, south Florida slash pine/turkey oak, scrubby flatwoods	Pine flatwoods, sand pine, xeric oak, oak hammock	X	X										X
Sciurus niger shermani	Sherman's fox squirrel	SSC	UR2	Mature longleaf pine/turkey oak and temperate forests	Pine flatwoods, oak hammock					X	X	X				X	X

Spring Sampling 1998

Summer Sampling 1998

Fall Sampling 1998

Table 3.4-2 - Listed Wildlife Species Potentially Occurring on the IMC Ona Mine Site

Scientific Name	Common Name	Designated Status[1]		Habitat Preference	Potential Habitat Onsite	Breeding/Nesting Season[2]											
						Win-ter		Spring			Summer			Fall			Win-ter
		FGFWFC	USFWS			J	F	M	A	M	J	J	A	S	O	N	D
Ursus americanus floridanus	Florida black bear	T	UR2	Hardwood swamp, cypress swamp, hardwood hammock, pine flatwoods	Hardwood swamps/floodplain forest	X						X	X	X	X	X	X

Spring Sampling 1998

Summer Sampling 1998

Fall Sampling 1998

Notes:

(1) Source: Florida Game and Freshwater Fish Commission (FGFWFC), *Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida*, June 1994. (Note: U.S. Fish and Wildlife Service [USFWS] Designated Status in 50 CFR 17.12 may differ.)

E = endangered.
T = threatened.
T(S/A) = threatened due to similarity of appearance.
SSC = species of special concern.
UR2 = under review for listing, but substantial evidence of biological vulnerability and/or threat is lacking.

(2) Breeding/nesting season depicted by **X**.

(3) Species observed onsite during previous surveys.

Source: IMC, 2002.

DRAFT

Table 3.4-3 - Scrub Jay Call Surveys, Spring and Fall 1998.

Location (Section, Township, Range)	Date	Time
S16, T34S, R23E	5/4/1998 5/5/1998	0805 to 0810 0815 to 0820 0725 to 0735
S9, T34S, R23E	5/5/1998	0845 to 0850 0850 to 0855
S31, T34S, R24E	5/19/1998	1030 to 1035
S31, R34S, R23E	5/20/1998	0710 to 0715 0750 to 0805
S9, T34S, R23E	5/20/1998	0830 to 0845 0905 to 0915
S8, T34S, R23E	5/20/1998	0935 to 0945
S4, T34S, R23E	5/20/1998	1000 to 1010
S16, T34S, R23E	10/19/1998	1030 to 1035 1035 to 1040 1040 to 1045 1045 to 1050 1055 to 1100 1100 to 1105 1105 to 1110
S9, T34S, R23E	10/20/1998	0725 to 0730 0740 to 0745 0750 to 0800
S31, T34S, R23E	10/21/1998	2110 to 2115 2115 to 2120 2120 to 2125 2125 to 2130 2130 to 2135 2135 to 2140 2145 to 2150

Source: IMC, 2002.

Table 3.4-4 Listed Wildlife Species Observed on IMC's Ona Site Spring, Summer, and Fall 1998

Common Name	Scientific Name	Listed Status*		Location/Comments	Season Observed (1)
		FFWCC†	USFWS**		
American alligator	*Alligator mississippiensis*	SSC	T(S/A)	Common wetlands, streams, and cattle ponds onsite.	S, SM, F
Arctic peregrine falcon	*Falco peregrinus tundrius*	E	T	Observed onsite, but is migratory species	W***
Gopher tortoise	*Gopherus polyphemus*	SSC	—	Locally common in xeric areas of the site. Captured in pit traps.	S, SM, F
Eastern indigo snake	*Drymarchon corais couperi*	T	T	Few individuals observed.	S, F
Gopher frog	*Rana capito*	SSC	—	Three captured in pit traps.	F
Burrowing owl	*Speotyto cunicularia*	SSC	—	Few active burrows found in pastures in central portion of the site.	S, SM, F
Florida sandhill crane	*Grus canadensis pratensis*	T	—	Heard or seen throughout the site. Some had young. Nest found onsite.	S, SM, F
Bald eagle	*Haliaeetus l. leucocephalus*	T	T	One individual observed perching in a tree in a pasture. Two mature and one immature bird seen repeatedly along Brushy Creek in fall.	S, F
Little blue heron	*Egretta caerula*	SSC	—	Observed infrequently in wetlands onsite.	S, SM, F
White ibis	*Eudocimus albus*	SSC	—	Commonly observed foraging onsite.	S, SM, F
Snowy egret	*Egretta thula*	SSC	—	Observed foraging infrequently onsite.	S, SM, F
Tricolored heron	*Egretta tricolor*	SSC	—	Few individuals observed foraging onsite.	S, SM, F
Woodstork	*Mycteria americana*	E	E	Observed foraging onsite.	S, SM, F
Roseate spoonbill	*Ajaja ajaja*	SSC	—	One individual observed flying over site.	SM
Sherman's fox squirrel	*Sciurus niger shermani*	SSC	—	Few individuals observed in oak/pastures and flatwoods onsite.	S, SM, F
Florida mouse	*Podomys floridanus*	SSC	—	26 individuals captured in 1,600 trap-nights onsite.	S
Round-tailed muskrat	*Neofiber alleni*	—	—	Domed houses observed in some of the marshes onsite.	S, F
Florida panther	*Felis concolor coryi*	E	E	Suspected paw print observed near Brushy Creek. U.S. Fish and Wildlife Service biologists made plaster cast. Large cat observed just offsite west of Mount Zion Church. No tracks could be found. USFWS was contacted.	S, F

Note: (1) Season observed
S = spring 1998.
SM = summer 1998.
F = fall 1998.
W = winter 1998.

* E = endangered, .T = threatened. †Florida Fish & Wildlife Conservation Commission. **U.S. Fish & Wildlife Service.
T(S/A) = threatened due to similarity of appearance.
SSC = species of special concern.
*** = incidental sighting made by WRAP biologists.
Source: IMC, 2002.

DRAFT

Table 3.5-1 - Hydrologic Data for Major Tributaries to the Peace River in Hardee County

Stream	Drainage Area (sq. mi.)	Period Analyzed	Average Rainfall (in/yr)	Average Runoff (in/yr)	Estimated Evapotranspiration (in/yr)
Brushy Creek	48	10/92 to 9/94	51.2	7.5	42.7
Charlie Creek	330	5/68 to 4/90	50.3	9.1	40.3
Hickory Creek	3.75	2/83 to 9/84	61.7	19.1	41.6
Horse Creek at Myakka Head	42	10/77 to 9/96	52.1	9.6	41.5
Horse Creek at Arcadia	218	5/68 to 4/90	50.3	9.9	39.4
Oak Creek	15	7/81 to 9/83	62.3	20.8	40.5
Payne Creek	121	10/79 to 9/98	52.6	12.7	39.0
West Fork Horse Creek	14	10/92 to 9/94	53.4	14.1	38.3

Source: IMC, 2002.

Table 3.5-2 - Average Annual Water Budget Under Natural Conditions

SOURCES	ACRE-FT	MGD	USES	ACRE-FT	MGD
Rainfall	43,632	38.95	ET	32,836	29.31
			Recharge	864	0.77
			Runoff	9,932	8.87
TOTAL	43,632	38.95	TOTAL	43,632	38.95

Source: IMC, 2002.

Table 3.5-3 - Runoff Characteristics for Ona Mine Site - Pre-Mining

Drainage Basin	Area (Acres)	Wetland		Upland (Acres)	ET (in/yr)	Streamflow (inches/yr)	Streamflow (cfs)	Baseflow (in/yr)	Baseflow (cfs)	Runoff (in/yr)	Runoff (cfs)
		Riparian[1] (Acres)	Other (Acres)								
Brushy Creek	7428.84	1475.6	609.98	5343.26	39.5	10.5	8.95	0.1	0.09	10.4	8.86
Oak Creek	4758.53	936.57	457.82	3364.15	39.6	10.4	5.70	0.1	0.05	10.3	5.64
Horse Creek	4204.39	321.97	454.2	3428.22	38.4	11.6	5.61	5	2.42	6.6	3.19
Brady Branch	2003.16	516.58	167.63	1318.95	40.2	9.8	2.27	0.1	0.02	9.7	2.24
Hickory Creek	1360.51	147.79	163.59	1049.12	38.8	11.2	1.75	0.4	0.06	10.8	1.69
West Fork Horse Creek	851.45	55.79	63.99	731.67	38.1	11.9	1.17	5	0.49	6.9	0.68
Troublesome Creek	60.9	0	7.39	53.5	37.7	12.3	0.09	0.4	0.00	11.9	0.08
Myakka River	7.72	0	0	7.72	37.0	13.0	0.01	0.1	0.00	12.9	0.01
Totals	20675.5	3454.3	1924.6	15296.6	39.27	10.7	25.55				

30-year Rainfall from Figure 3.5-2 for period 1970-1999 in in/yr = 51
Recharge assumed to be 1 inch/year

Estimated streamflow in Horse Creek Basin (cfs) 17.99
Estimated streamflow in Peace River tributaries (cfs) 7.54
Note:
1 = Includes Lake Areas

Table 3.5-4 - Results from Stage-Discharge Measurements for Ona Mines

Ona - Brushy Creek

Date	Stage ft MSL	Discharge cfs	Source	Comments
8/3/99	73.75		Schreuder	Could not measure; stream was not wadeable; not equipped for high water measurements
9/9/99	73.07	4.34	Schreuder	
10/7/99	74.34	73.9	Schreuder	
11/4/99	73.06	4.4	Schreuder	
12/7/99	72.4	2.21	Schreuder	
1/6/00	72.46	0	Schreuder	
2/8/00	72.27	0	Schreuder	
3/1/00	71.84	0	Schreuder	
4/7/00	71.06	0	Schreuder	
4/27/00	Dry	0	Schreuder	
6/6/00	Dry	0	Schreuder	
7/3/00	Dry	0	Schreuder	

Ona - Hickory Creek

Date	Stage ft MSL	Discharge cfs	Source	Comments
8/3/99	81.4	0	Schreuder	
9/8/99	81.5	0.16	Schreuder	
10/1/99	83.01	7	Schreuder	
11/1/99	82.15	3.2	Schreuder	
12/1/99	81.24	0	Schreuder	
1/1/00	81.32	0	Schreuder	
2/29/00	81.34	0.13	Schreuder	
3/31/00	81.05	0	Schreuder	

Ona - Horse Creek Upstream

Date	Stage ft MSL	Discharge cfs	Source	Comments
8/3/99	100.9	3.09	Schreuder	
9/9/99	100.45	1.27	Schreuder	
10/7/99	100.97	3.9	Schreuder	
11/4/99	100.47	1.3	Schreuder	
12/7/99	100.08	0	Schreuder	
1/6/00	100.09	0	Schreuder	
2/8/00	100.15	0	Schreuder	
3/1/00	99.71	0	Schreuder	
4/7/00	Dry	0	Schreuder	
6/6/00	Dry	0	Schreuder	
7/3/00	Dry	0	Schreuder	

Ona - Oak Creek

Date	Stage ft MSL	Discharge cfs	Source	Comments
8/3/99	73.05	0.65	Schreuder	
9/9/99	73.28	1.04	Schreuder	
10/6/99	74.17	10.8	Schreuder	
11/5/99	73.06	0.7	Schreuder	
12/6/99	72.45	0	Schreuder	
1/6/00	72.53	0	Schreuder	
2/3/00	72.52	0.28	Schreuder	
3/1/00	72.04	0	Schreuder	
4/7/00	71.37	0	Schreuder	
4/27/00	Dry	0	Schreuder	
6/6/00	Dry	0	Schreuder	
7/3/00	Dry	0	Schreuder	

Ona - West Fork of Horse Creek

Date	Stage ft MSL	Discharge cfs	Source	Comments
10/7/99	77.57	30.4	Schreuder	
11/5/99	75.9	6.26	Schreuder	
12/7/99	75.59	2.62	Schreuder	
1/6/00	75.4	1.4	Schreuder	
2/8/00	75.29	1.31	Schreuder	
3/1/00	75.16	0.73	Schreuder	
4/7/00	74.98	0.06	Schreuder	
4/27/00	74.6	0	Schreuder	
6/6/00	74.39	0	Schreuder	
7/3/00	74.31	0	Schreuder	

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches									S32 T33S R23E		
Year Day	1995 January	February	March	April	May	June	July	August	September	October	November	December
1			0.02	0.82		2.30		1.93	0.27		1.00	
2						1.28		0.73		0.07		
3						0.66				0.65		
4	0.29	0.04			1.55	1.78				0.22		
5				0.26		0.93			0.24	1.83		
6				0.30					0.08	0.16		
7	0.53		0.02				0.57		0.10			
8			0.88				0.23		1.95	0.08	0.63	
9								0.08	0.23	1.00		
10						0.20	0.14		0.98	0.57		
11							0.07	0.72	0.65		0.27	
12		0.31		0.05		0.04	0.02	1.48	0.08			
13		0.98				0.63	1.62					
14	0.90				0.08		0.06	0.04		0.22		
15	0.12											
16							0.02					
17			0.14				0.95					
18			0.09			0.28	0.53		0.40	0.21		
19							0.18					0.08
20		0.68			0.50	0.42	0.08					
21						0.06	1.10	0.53				
22						0.30						0.10
23	0.10					0.64			0.05			
24				0.33		0.47	0.11	1.25	1.90			
25						0.55	0.18	0.12				
26							2.08	0.19				
27							0.02					
28			0.03	2.03			0.38			0.08		
29							1.65	0.24	0.07		0.08	
30	0.25					0.37	0.98	0.93				
31			0.14					0.12		2.05		0.55
Totals: Monthly	2.19	2.01	1.32	3.79	2.13	10.91	10.97	8.36	7.00	7.14	1.98	0.73
Annual	58.53											

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches								S32 T33S R23E			
Year Day	1996 January	February	March	April	May	June	July	August	September	October	November	December
1	2.14		0.60					0.39		0.32		0.98
2	0.24		1.18									
3	0.67	0.64			1.18			0.56		0.04		
4							0.03					
5							0.74		0.23	0.07		
6							0.65	0.04		0.72		
7	0.24		0.08						1.74	1.24		0.45
8				0.23		0.20		0.16		0.48	0.09	
9						0.14			0.05			
10							0.30		0.30			
11			0.75			0.07		0.04	0.04			
12	0.64					1.00	1.68	0.04				
13							0.22					
14												
15		0.75		0.21		1.30	0.08					
16		0.12				0.23				0.02		
17						0.02	0.13	1.07	0.26	0.13		
18						0.05			0.18			
19	0.24					0.29		0.01				0.02
20					0.08	1.32		0.03	0.43			
21					1.26	0.36			0.10			
22						0.05			0.52			
23						0.05						
24					0.13			0.24				
25					0.28	0.54						
26					0.32	0.81		0.02			0.30	
27			0.97			0.28		0.04				
28			0.39		0.11	0.30						
29		0.01			0.25	0.02			0.04			
30			0.62	0.87	0.03		0.25					
31			0.28									
Totals: Monthly	4.17	1.52	4.87	1.31	3.64	7.03	4.08	2.64	3.89	3.02	0.39	1.45
Annual	38.01											

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches								S32 T33S R23E			
Year Day	1997 January	February	March	April	May	June	July	August	September	October	November	December
1							0.04	0.02	0.21			
2							0.02	0.04		0.23	1.45	
3								0.56				
4					0.06		1.40	0.29	1.13			1.07
5							0.78	0.28				
6		0.54					0.02					
7				0.30	0.02			0.70	0.04			
8		0.03						0.33		0.02		
9	1.27						0.04	1.25				
10	0.02	0.08						0.02				
11				0.12		0.21						
12				0.53	1.01				0.11			0.89
13	0.07					0.12		0.24			6.95	3.22
14	0.09		1.21	0.58			1.36				0.20	0.53
15		0.55		0.32		0.01	0.03	0.03				
16		0.07										
17						0.01			0.18			
18							0.73			0.22		
19							0.15					
20			0.53			0.24	1.70					
21			0.18				0.04					
22					0.16		1.26	0.11			1.18	
23				0.90	0.22	0.02	0.06	0.15	0.49			
24						0.28	0.40		0.25			0.03
25	0.24					0.16		0.22				0.30
26				1.69	0.19		0.06		1.25			0.60
27							0.16		3.37	0.83		1.25
28				1.95			0.54					
29	1.24		0.12			1.73	0.18					0.05
30											0.22	0.12
31			0.03		0.58		0.18			0.33		
Totals: Monthly	2.93	1.27	2.07	6.39	2.24	2.78	9.15	4.24	7.03	1.63	10.00	8.06
Annual	57.79											

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches									S32 T33S R23E		
Year Day	1998 January	February	March	April	May	June	July	August	September	October	November	December
1			0.42					1.20	0.11	0.11		
2		1.78							0.16	0.04		
3		0.24						0.02	0.59			0.05
4		0.04			0.14						1.76	
5							0.40	2.60			1.09	
6		0.26						0.62	0.03	0.22		
7								1.12	0.21			
8	0.90		0.17				0.34		0.10			
9			0.93			0.61	0.22					
10							0.24	1.90	1.25			
11						1.02	0.03					0.36
12							1.20			0.77		
13		0.22					0.60					0.29
14							0.64					
15	1.00	1.30					1.25		0.11			
16	0.04	0.70					0.04	1.48				
17		1.91						0.10	0.09	0.13		
18			0.50						0.98			
19			5.87			0.02	1.74	0.03	2.30			0.02
20		0.22	0.74	0.63			0.31	0.32	0.50			
21						1.33	0.06	0.45	0.42		0.86	
22							0.05		0.08			
23	3.16	0.23							0.06		0.06	
24	0.15					1.25			0.36			
25									1.35		0.83	
26							0.06		0.90			0.02
27	0.08	0.09			0.02	0.07						
28		0.97			2.20			0.08				0.05
29					0.02		0.71					0.14
30				0.14		0.22		0.05	1.10			
31							0.07					
Totals: Monthly	5.33	7.96	8.63	0.77	2.38	4.52	7.96	9.97	10.70	1.27	4.60	0.93
Annual	65.02											

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches									S8 T34S R23E		
Year Day	1999 January	February	March	April	May	June	July	August	September	October	November	December
1							0.10	0.02			1.05	
2	0.55	0.10				0.90		0.16			0.05	
3	0.85		0.07			0.03	0.05			0.72		
4							0.02	0.83	0.05	1.12		
5						1.37		0.70		0.15		
6								0.74	0.02			
7						0.05		0.21	0.19	0.12		
8						0.04				0.25		
9	0.20				2.63		0.07	0.26		0.10		
10	0.05							0.23				
11							0.20		0.84			
12							1.14	0.46		0.12		
13												
14			0.61		0.45				0.44			0.07
15			0.02			3.50	0.67			0.03		
16	0.20					0.06		0.14		0.08		
17				0.42		2.02		0.40				0.37
18						0.19	0.25		0.65	0.03		1.45
19								0.22	0.45	0.02		
20						0.10		1.22	0.15			
21						0.03		0.45	0.17			
22						0.03	1.50				0.05	
23	0.55					0.20		0.55				
24	0.85					0.18						
25						0.07	0.06		0.25		0.17	
26						0.06	1.01		0.32			
27						0.55	0.02	0.45	1.18			
28				2.35								0.10
29				0.05	2.76	0.14						
30				0.23	1.30	1.21	2.30	0.97				
31								0.23				
Totals: Monthly	3.25	0.10	0.70	3.05	7.14	10.73	7.39	8.24	4.71	2.74	1.32	1.99
Annual	51.36											

Source: IMC, 2002.

	IMC Phosphates Company Horse Creek - South Rainfall Data in Inches								S8 T34S R23E			
Year Day	2000 January	February	March	April	May	June	July	August	September	October	November	December
1							0.61	0.23				
2		0.03						0.02				
3									0.02			
4				0.02						0.02		
5												
6								0.38	0.46	1.75		
7						0.26			0.48			
8				0.01			0.12		0.15			
9								0.11				
10					0.03						0.08	
11			0.04			0.26						0.24
12			0.01			0.06		1.34				
13				0.12		0.20		0.15				
14		0.06		0.53	0.02		0.05				0.09	
15				1.51			1.04	0.27				
16			0.04						0.15			
17									3.34		0.15	0.11
18						0.67	0.02		0.01			
19						0.30						0.02
20						0.54		0.04	0.50			
21						0.07	0.98		0.03			
22					0.02		0.68		0.02			
23						0.21	0.09	0.14				
24	0.54						0.06					
25						1.56	0.32	0.52			1.22	
26						0.43					0.39	
27			1.15			0.38						
28			0.03									0.58
29						0.03		1.02				
30							0.42					
31	0.20							0.02				
Totals: Monthly	0.74	0.09	1.27	2.19	0.07	4.97	4.39	4.24	5.16	1.77	1.93	0.95
Annual	27.77											

Source: IMC, 2002.

	IMC Phosphates Company S8 T34S R23E Horse Creek - South Rainfall Data in Inches											
Year Day	2001 January	February	March	April	May	June	July	August	September	October	November	December
1				0.02	0.02							
2												
3		0.03										
4			1.40									
5												
6												
7												
8	0.03											
9	0.08		0.06									
10												
11												
12												
13			0.10									
14												
15												
16												
17												
18			0.27	0.05	0.05							
19			0.35									
20	0.31		0.03									
21			0.02									
22												
23												
24												
25				0.03	0.03							
26												
27												
28			0.03									
29			2.69									
30			2.03									
31			0.06									
Totals: Monthly	0.42	0.03	7.04	0.10	0.10							
Annual												

Source: IMC, 2002.

Table 3.5-6 - Flood Level Elevations at Cross Sections on Horse Creek

Reach	Cross Section	River Station	Distance from Mouth (ft)	Streambed Elevation (ft, NGVD)	2-Year flow (cfs)	2-Year Flood Elevation (ft, NGVD)	25-Year Flow (cfs)	25-Year Flood Elevation (ft, NGVD)	100-Year Flow (cfs)	100-Year Flood Elevation (ft, NGVD)	Remarks
Mainstem	HO-T*	3.35	20171	98.8	549	103.36	2079	105.56	3098	106.44	
Mainstem	HO-S*	3.124	18978	97	549	102.67	2079	104.2	3098	105.03	
Mainstem	HO-R*	3.008	18365	95.8	554	102.51	2064	103.62	3120	104.36	
Mainstem	HO-QU*	3	18315	94.7	554	102.51	2064	103.58	3120	104.31	
Mainstem	HO-Q	2.991									Culvert
Mainstem	HO-QD*	2.98	18283	94.7	554	101.23	2064	103.35	3120	104.27	
Mainstem	HO-P*	2.975	18191	94.2	560	101.17	2086	103.29	3153	104.2	
Mainstem	HO-O*	2.743	16966	90.7	576	99.69	2139	101.77	3234	102.66	
Mainstem	HO-N*	2.351	14896	89.5	579	97.07	2178	99	3256	99.81	
Mainstem	HO-M*	1.988	12980	87.4	589	94.38	2221	96.46	3299	97.39	
Mainstem	HO-L*	1.632	11100	84	613	92.5	2264	94.81	3453	95.83	
Mainstem	HO-K*	1.355	9638	82	618	90.49	2281	92.93	3481	93.95	
Mainstem	HO-J*	0.949	7494	79.7	624	87.05	2302	90.08	3520	91.23	
Mainstem	HO-I*	0.582	5556	76.1	638	84.35	2348	87.32	3596	88.55	
Mainstem	HO-H*	0.218	3634	71.6	650	80.01	2386	84.08	3657	85.73	
Mainstem	HO-G*	0	2483	68.7	656	79.1	2408	83.04	3691	84.94	
Lower Horse	HO-F*	0.423	2233	63.1	788	78.94	2852	82.84	4695	84.78	
Lower Horse	HO-E*	0.304	1605	66.3	788	78.63	2852	82.47	4695	84.45	
Lower Horse	HO-D*	0.279									Bridge
Lower Horse	HO-C*	0.254	1341	65.2	791	78.32	2861	81.51	4709	82.99	
Lower Horse	HO-B*	0.14	739	64	800	77.28	2890	80.26	4751	81.81	
Lower Horse	HO-A*	0	0	63.9	800	76.25	2890	79.18	4751	80.8	
Lower West Fork	HO-UD	0	0	70	434	79.17	1647	83.1	2472	84.97	
Lower West Fork	HO-U*	0.1	500	71.4	424	80.91	1610	83.72	2419	85.27	
Lower West Fork	HO-V*	0.174	1418	75.3	424	83.52	1610	86.05	2419	87	
Lower West Fork	HO-WD*	0.19	1598	74.9	425	83.84	1614	86.42	2425	87.36	
Lower West Fork	HO-W	0.203									Bridge
Lower West Fork	HO-WU*	0.21	1634	75	425	83.94	1614	86.7	2425	87.39	
Lower West Fork	HO-X*	0.232	1749	75.1	425	83.97	1614	86.74	2425	87.45	
Lower West Fork	HO-Y*	0.42	2742	78	416	85.2	1583	87.68	2379	88.47	
Lower West Fork	HO-Z*	0.817	4838	83.35	394	89.14	1509	91.78	2272	92.66	
Lower West Fork	HO-AA*	1.024	5931	83.4	394	90.84	1506	93.41	2267	94.32	
Lower West Fork	HO-AB*	1.2	6860	86	385	92.14	1476	94.71	2224	95.6	
Lower West Fork	HO-AC*	1.526	8581	91.2	361	95.33	1392	97.26	2102	98.08	
Lower West Fork	10675-1*	1.831	9691	92.58	353	96.4	1366	98.45	2063	99.31	
Lower West Fork	10675-2*	2.01	10641	92.35	354	98.07	1367	99.84	2064	100.6	
Lower West Fork	10675-3*	2.314	12241	95.3	339	99.5	1316	101.24	1990	102.01	
Lower West Fork	10675-4*	2.598	13741	96.97	319	100.81	1243	102.31	1882	103.01	
Manatee County Line 1900 feet downstream of Section HO-13-4* Surveyed cross sections.											
Lower West Fork	HO-13-4*	2.977	16242	101.5	293	104.74	1152	105.82	1750	106.36	

* Surveyed Cross Section.
Flows computed using Bridges Methodology.

Source: IMC, 2002.

Table 3.5-7 - Flood Level Elevation at Cross Sections on Brushy and Oak Creeks

Reach	Cross Section	Distance from Reference Point (ft)	Streambed Elevation (ft, NGVD)	2-Year flow (cfs)	2-Year Flood Elevation (ft, NGVD)	25-Year Flow (cfs)	25-Year Flood Elevation (ft, NGVD)	100-Year Flow (cfs)	100-Year Flood Elevation (ft, NGVD)	Remarks
Brushy Creek	363423b	1200	69.7	1019	77.2	2730	79.01	3369	79.47	
Brushy Creek	363423a	2425	69.3	1040	77.34	3236	79.19	4186	79.67	
Brushy Creek	BR2-C*	3545	69.9	1067	77.48	3258	79.37	4204	79.87	
Brushy Creek	BR2-B*	4395	70.6	1087	77.9	3280	79.63	4221	80.12	
Brushy Creek	BR-A*	6625	71.8	1013	78.56	2449	80.01	2606	80.37	
Brushy Creek	BR-B*	8210	73	1038	79.43	2524	80.73	2715	80.94	
Brushy Creek	BR-C*	9810	71.6	1045	79.9	2658	81.2	2912	81.37	
Brushy Creek	BR-E*	9870	71.6	1054	80.13	2667	82.35	2924	82.62	
Brushy Creek	BR-F*	11905	73.4	1037	81.13	1670	82.65	2141	82.94	
Brushy Creek	BR-G*	13170	76.3	1042	81.8	2093	82.95	2589	83.29	
Brushy Creek	BR-H*	14835	76.4	1255	82.4	3746	83.7	4742	84.08	
Brushy Creek	BR-I*	17335	77.7	1208	83.4	3566	84.65	4498	85.02	
Brushy Creek	BR-J*	19675	78.7	1189	84.12	3686	85.42	4902	85.81	
Brushy Creek	BR-K*	21515	79	1205	84.66	3702	86.2	4914	86.68	
Brushy Creek	BR-L*	23315	79.6	1263	84.7	3744	86.28	4944	86.73	
Brushy Creek	BR-M*	25680	81.7	1409	85.52	4033	86.88	5225	87.39	
Brushy Creek	BR-N*	28045	82.2	1400	87.24	4162	88.44	5444	88.82	
Brushy Creek	BR-O*	29750	81	922	87.43	2776	88.71	3563	89.12	
Brushy Creek	BR-P*	32640	82	779	88.31	2218	89.55	2900	89.88	
Brushy Creek	BR-Q*	33550	82.4	779	88.34	2218	89.6	2900	89.94	
Lettis Creek	BR-AC	2063	82.5	609	87.63	1427	89.33	1884	89.91	
Lettis Creek	BR-AD	3689	84.9	738	88.01	1724	89.52	2128	90.08	
Lettis Creek	BR-AE	4527	86.9	101	88.02	222	89.52	268	90.08	
Oak Creek	OAK-C*	0	70.5	195	76.53	291	77	306	77.07	
Oak Creek	OAK-E*	30	71	195	76.85	287	77.7	298	78.82	Bridge
Oak Creek	OAK-F*	1005	71.4	195	77.25	334	77.96	393	78.11	
Oak Creek	OAK-G*	2745	73.2	59	77.27	76	77.97	85	78.12	
Oak Creek	OAK-H*	4905	73.7	366	78.36	721	79.07	821	79.21	
Oak Creek	OAK-I*	7085	73.95	436	78.51	777	79.23	861	79.39	
Oak Creek	OAK-J*	8575	74.4	426	78.72	719	79.37	765	79.52	
Oak Creek	OAK-L*	8605	74.4	430	79.26	730	80.23	778	80.4	Bridge
Oak Creek	OAK-M*	9815	74.8	432	79.32	730	80.29	770	80.46	
Oak Creek	OAK-N*	12185	76.3	449	79.67	1298	81.05	1687	81.43	
Oak Creek	OAK-O*	12725	73.3	452	79.7	1305	81.13	1682	81.52	
Oak Creek	OAK-Q*	12810	72.5	451	79.83	1317	81.89	1673	82.71	Bridge
Oak Creek	OAK-AZ*	13410	75	451	79.83	1352	81.89	1673	82.71	
Oak Creek Popoff	**	1650	**	110	75.68	160	76.35	179	76.52	
Oak Creek Popoff	**	3700	**	155	76.09	386	76.67	460	76.78	
Oak Creek Popoff	**	4400	**	156	77.13	387	77.7	457	77.83	

* Surveyed Cross Section.

** Flood level elevation falls between surveyed cross section locations.

Flows computed using hydrometeorological methodology.

Source: IMC, 2002.

Table 3.6-1 - Comparison Summary of Selected Parameters Along Horse Creek from 1962 through 1981.

Parameter	Mean Concentration		
	Headwaters CF 1981	MCC-2 MCC 1976	Arcadia USGS 1962-1981
Alkalinity (mg/L)	11.6	30.5	30.0
Coliforms, fecal (#/100mL)	212.0	271.0	--
Conductivity (μmhos/cm)	118.0	136.0	225.0
DO (mg/L)	--	8.0	7.3
Nitrogen, Total (mg/L)	--	1.1	1.2
pH (std. Units)	6.2	6.2	7.0
Phosphate, Total (mg/L)	0.5	0.7	1.7
Sulfate (mg/L)	8.3	8.3	37.8
Organic Carbon, Total (mg/L)	--	24.0	25.2

Sources: USEPA, 1988; USGS, 2001b.

Table 3.6-2 - Summary of Water Quality Data for Horse Creek Near Arcadia 1962 - 1980

Parameter	Units	Horse Creek-Arcadia				
		Minimum	Mean	Maximum	Std. Dev.	# Samples
General Parameters						
Streamflow	cfs	0.5	125.8	808	197.6	33
Color	PCU	30	124.0	300	78.4	25
TDS	mg/L	1	107.2	257	75.1	25
TSS	mg/L	62	151.6	308	71.9	16
Turbidity	JTU	1	8.9	30	8.7	13
Temperature	°C	12	24.8	32	4.5	82
Ions						
Conductivity	µmhos/cm	64	255.1	753	172.6	93
Chloride (Total)	mg/L	7.2	15.8	29	4.8	37
Fluoride (Dissolved)	mg/L	0.1	0.5	1.5	0.2	36
Sulfate (Total)	mg/L	4.8	30.4	140	32.6	26
Calcium (Dissolved)	mg/L	5.2	20.4	58	16.2	26
Magnesium (Dissolved)	mg/L	2.4	6.2	18	4.0	26
Sodium (Dissolved)	mg/L	3.8	8.8	13	3.0	25
Potassium (Dissolved)	mg/L	0.3	1.2	4	0.8	25
Silica (Dissolved)	mg/L	0.6	3.8	11	2.4	27
Strontium (Dissolved)	mg/L	130	550.0	900	389.7	3
Alkalinity and pH						
Alkalinity	mg/L as $CaCO_3$	11	38.3	114	32.6	25
pH	Std Units	5.5	6.9	8	0.6	45
Nutrients						
Nitrite	mg/L as N	0.01	0.0	0.02	0.0	6
NO_2+NO_3	mg/L as N	0.07	0.1	0.22	0.1	5
TKN	mg/L	1	1.3	2	0.4	5
TON	mg/L as N	0.69	1.2	2	0.4	7
Total P	mg/L	0.31	0.5	0.7	0.1	14
Ortho-P	mg/L	0.3	0.5	0.6	0.1	14
Oxygen and Oxygen Demand:						
Dissolved Oxygen	mg/L	1.9	7.0	11.7	1.9	63
BOD	mg/L	0.5	1.0	2	0.5	13
TOC	mg/L as C	4	19.2	40	9.5	17
Metals						
Iron, Total	mg/L	580	785.0	990	289.9	2
Aluminum, Total	mg/L	130	190.0	250	84.9	2
Arsenic, Total	mg/L	1	1.0	1	0.0	2

Source: USGS, 2001b.

Table 3.6-3 - Comparison of Water Quality Data for Horse Creek and selected tributaries for 1993-1995 Monitoring.

Parameter	Units	Horse Creek-Myakka Head			West Fork Horse Creek			Brushy Creek		Horse Creek near Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Maximum	Minimum	Mean	Maximum
General Parameters												
Color	PCU	90	--	420	70	138	240	200	340	40	167	320
TDS	mg/L	72	--	144	98	123	131	113	173	80	177	243
Ions												
Conductivity	µmhos/cm	46	120	175	119	165	227	199	205	64	292	743
Chloride (Total)	mg/L	5.3	--	27	13	21.6	27	11	32	6.1	19	29
Fluoride (Dissolved)	mg/L	0.1	--	0.3	0.1	0.19	0.3	0.2	0.4	0.1	0.23	0.3
Sulfate (Total)	mg/L	2.8	--	11	6.1	11.8	20	4.4	7.7	5.6	38.3	68
Calcium (Dissolved)	mg/L	3.4	--	8.9	6.4	9.46	13	8.8	15	5	19.2	29
Magnesium (Dissolved)	mg/L	1.7	--	5.7	3.8	5.51	7.3	4.5	8.1	2.4	7.63	12
Sodium (Dissolved)	mg/L	2.7	--	11	4.7	7.62	10	5.7	13	2.9	7.68	11
Potassium (Dissolved)	mg/L	1	--	4.7	2	4.01	5.9	1	6.2	2.2	3.85	4.9
Silica (Dissolved)	mg/L	2.4	--	4.7	1.7	4.08	6	0.8	6	2.6	4.67	7.8
Strontium (Dissolved)	µg/L	26	--	100	67	270	720	76	110	72	272	450
Alkalinity and pH												
Alkalinity	mg/L as $CaCO_3$	4.9	--	24	7.4	20.7	37	21	44	9.2	26.2	44
pH	Std Units	4.7	6.23	7.6	6.5		6.9	7	7.1	5.4	6.82	8.5
Nutrients												
Ammonia	mg/L	0.03	--	0.05	0.02	0.03	0.06	0.02	0.07	<0.02	0.04(1)	0.06
NO_2+NO_3	mg/L as N	<0.02	0.13(1)	0.4	0.02	0.06	0.14	<0.02	0.02	<0.02	0.817	4
TKN	mg/L	<0.04	0.03(1)	0.05	0.35	0.76	1.2	1	1.7	0.63	1.02	1.8
Total P	mg/L	0.11	0.34	0.4	0.12	0.22	0.31	0.45	0.9	0.28	0.437	0.69
Ortho-P	mg/L	0.08	0.31	0.43	0.11	0.18	0.24	0.4	0.88	0.25	0.41	0.66

NOTE:
(1) = Mean value is estimated using a log-probability regression to predict the values below the detection limit.
-- = No Data
Source: USGS, 1997.

Table 3.6-4 - Comparison of Water Quality Data for Horse Creek for 1998-1999 Monitoring.

Parameter	Units	Horse Creek-Myakka Head			Horse Creek near Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs	0.24	69.12	138	3	125.2	268
Color	PCU	280	340	400			
TDS	mg/L	108	121.5	135	145	332.3	588
Temperature	°C	12	21.9	26.4	10	20.92	27.2
Ions							
Conductivity	µmhos/cm	66	132	198	235	399.2	773
Chloride (Total)	mg/L	8.5	9.75	11	17	23.3	31
Fluoride (Dissolved)	mg/L	0.16	0.2	0.23	0.23	0.35	0.53
Sulfate (Total)	mg/L	3.2	4.9	6.5	61	180.3	340
Calcium (Dissolved)	mg/L	6	6.9	7.7	23	59	110
Magnesium (Dissolved)	mg/L	2.4	3.1	3.7	9.8	22.6	40
Sodium (Dissolved)	mg/L	3.7	4.7	5.6	7.6	10.2	14
Potassium (Dissolved)	mg/L	1.6	1.9	2.2	4.1	5.5	6.2
Silica (Dissolved)	mg/L	5.2	5.3	5.4	0.8	4.5	6.8
Strontium (Dissolved)	µg/L	38	44.5	51	480	1207	2200
Alkalinity and pH							
pH	Std Units	5.4	6.03	7.3	5.8	6.28	6.9
Nutrients							
Ammonia	mg/L	0.02	0.032	0.05	0.03	0.05	0.09
Nitrite	mg/L as N	<0.01		0.02	<0.01		0.02
NO_2+NO_3	mg/L as N	0.04	0.077	0.11	0.03	0.37	0.83
TKN	mg/L	0.41	0.77	1.1	0.4	0.912	1.6
Total P	mg/L	0.3	0.425	0.74	0.27	0.452	0.79
Ortho-P	mg/L	0.28	0.39	0.72	0.27	0.414	0.74
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L	5.1	7.1	10.2	4.7	6.44	9.2

Source: USGS, 2001b.

Table 3.6-5 - Comparison Summary of Water Quality Data Along Peace River (1951 - 1960).

Parameter	Units	Zolfo Springs			Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs				342	1891.6	10600
Color	PCU	20	100.0	180	30	102.5	210
TDS	mg/L	82	192.5	303	43	134.5	246
TSS	mg/L						
Turbidity	JTU						
Temperature	°C	0.3	--	0.3	16	23.8	29
Ions							
Conductivity	µmhos/cm	138	275.5	413	73	222.0	371
Chloride (Total)	mg/L	9.4	11.2	13	0.7	12.5	18
Fluoride (Dissolved)	mg/L	2	3.5	5	0.4	1.2	2.6
Sulfate (Total)	mg/L	13	61.5	110	7.2	44.7	100
Calcium (Dissolved)	mg/L	15	28.5	42	6.2	24.4	46
Magnesium (Dissolved)	mg/L	2.6	10.8	19	1.7	5.2	9.5
Sodium (Dissolved)	mg/L	9.1	19.1	29	4.7	11.8	19
Potassium (Dissolved)	mg/L	0.7	0.8	0.8	0(1)	1.2	2.2
Silica (Dissolved)	mg/L	7.1	12.6	18	1.3	8.3	18
Strontium (Dissolved)	µg/L						
Alkalinity and pH							
Alkalinity	mg/L as $CaCO_3$	26	39.5	53	11	32.8	59
pH	Std Units	6.8	7.0	7.2	6.3	6.8	7.3
Nutrients							
Ammonia	mg/L						
Nitrite	mg/L as N						
NO_2+NO_3	mg/L as N						
TKN	mg/L						
TON	mg/L as N						
Total P	mg/L						
Ortho-P	mg/L						
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L						
BOD	mg/L						
TOC	mg/L as C						
Chorophyll							
Chlorophyll a	mg/L						
Metals							
Iron	mg/L	250	325.0	400	90	373.6	670
Aluminum	mg/L	0(1)	--	0(1)			
Arsenic	mg/L						

NOTE:
(1) = value less than detection limit
'--' = indicates only one sample, and therefore no mean
Source: USGS, 2001b.

Table 3.6-5 - Comparison Summary of Water Quality Data Along Peace River (1961 - 1970).

Parameter	Units	Zolfo Springs			Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs	18	498.6	1530	0.15	974.8	8970
Color	PCU	0(1)	50.3	160	0(1)	87.8	280
TDS	mg/L	97	208.9	342	36	179.4	390
TSS	mg/L						
Turbidity	JTU	4	22.3	230	2	6.7	17
Temperature	°C	12	23.0	30	12	23.1	34
Ions							
Conductivity	µmhos/cm	151	351.5	900	22	286.0	600
Chloride (Total)	mg/L	9.5	14.8	18	0.9	15.4	51
Fluoride (Dissolved)	mg/L	0.2	5.5	210	0(1)	1.6	8.1
Sulfate (Total)	mg/L	29	76.5	150	0.97	62.1	200
Calcium (Dissolved)	mg/L	15	34.1	57	0.38	29.2	68
Magnesium (Dissolved)	mg/L	4.5	11.8	22	0.9	9.9	25
Sodium (Dissolved)	mg/L	9.4	16.5	26	0.22	14.3	26
Potassium (Dissolved)	mg/L	0.8	1.6	2.4	0.4	1.7	8.5
Silica (Dissolved)	mg/L	4.2	9.0	14	0.13	9.1	29
Strontium (Dissolved)	µg/L	1800	--	1800	0(1)	938.0	1700
Alkalinity and pH							
Alkalinity	mg/L as $CaCO_3$	0(1)	50.7	89	4	43.0	92
pH	Std Units	6.5	7.3	8.1	3.8	7.2	8.3
Nutrients							
Ammonia	mg/L						
Nitrite	mg/L as N						
NO_2+NO_3	mg/L as N						
TKN	mg/L						
TON	mg/L as N	0.38	--	0.38	0.82	--	0.82
Total P	mg/L						
Ortho-P	mg/L						
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L	6.7	7.8	9.5	6.1	6.2	6.3
BOD	mg/L				0.7	--	0.7
TOC	mg/L as C				12	--	12
Chorophyll							
Chlorophyll a	mg/L						
Metals							
Iron	mg/L				160	355.0	550
Aluminum	mg/L						
Arsenic	mg/L						

NOTE:
(1) = value less than detection limit
'--' = indicates only one sample, and therefore no mean
Source: USGS, 2001b.

Table 3.6-5 - Comparison Summary of Water Quality Data Along Peace River (1971 - 1980).

Parameter	Units	Zolfo Springs			Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs	131	341.9	910	817	817.0	817
Color	PCU	0(1)	69.3	180	0(1)	64.2	200
TDS	mg/L	140	259.6	362	89	208.1	351
TSS	mg/L						
Turbidity	JTU	1	7.4	20	0(1)	4.8	25
Temperature	°C	11	23.6	31	10	23.6	31.5
Ions							
Conductivity	µmhos/cm	130	411.8	742	100	363.7	635
Chloride (Total)	mg/L	13	16.8	21	11	18.2	25
Fluoride (Dissolved)	mg/L	1.2	1.9	2.8	0.4	1.4	2.7
Sulfate (Total)	mg/L	43	111.6	180	19	85.9	170
Calcium (Dissolved)	mg/L	24	45.0	65	12	34.4	60
Magnesium (Dissolved)	mg/L	9.1	15.6	22	5.1	13.2	23
Sodium (Dissolved)	mg/L	12	17.6	24	6	15.0	27
Potassium (Dissolved)	mg/L	0.8	1.7	2.7	1	2.5	4.4
Silica (Dissolved)	mg/L	1.6	6.3	11	0(1)	6.2	12
Strontium (Dissolved)	µg/L	370	941.7	1800	0(1)	774.5	1800
Alkalinity and pH							
Alkalinity	mg/L as $CaCO_3$	37	54.9	76	24	52.1	176
pH	Std Units	4.2	6.9	8.4	4.5	7.1	8.5
Nutrients							
Ammonia	mg/L	0.02	0.1	0.88	0.01	0.1	0.37
Nitrite	mg/L as N	0.006	0.061	0.4	0(1)	0.06	2.7
NO_2+NO_3	mg/L as N	0.45	1.1	2.67	0.01	0.8	2.65
TKN	mg/L	0.41	0.9	2.2	0.18	1.2	3.5
TON	mg/L as N	0.39	0.9	2.1	0.1	1.0	3.5
Total P	mg/L	1.6	3.6	21	0.14	2.7	10
Ortho-P	mg/L	1.6	3.5	21	0.13	2.5	9.7
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L	3.9	7.0	12	3.5	7.4	11.8
BOD	mg/L	0(1)	1.5	3.5	0.4	1.3	2.8
TOC	mg/L as C	7	17.4	35			
Chorophyll							
Chlorophyll a	mg/L						
Metals							
Iron	mg/L	350	--	350	50	484.1	2800
Aluminum	mg/L	90	--	90	70	262.9	570
Arsenic	mg/L	1	--	1	1	2.8	20

NOTE:
(1) = value less than detection limit
'--' = indicates only one sample, and therefore no mean
Source: USGS, 2001b.

Table 3.6-5 - Comparison Summary of Water Quality Data Along Peace River (1981 - 1990).

Parameter	Units	Zolfo Springs			Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs						
Color	PCU	10	66.2	220	15	89.7	200
TDS	mg/L	118	231.1	357	73	219.8	360
TSS	mg/L	4	15.0	45	6	7.0	8
Turbidity	JTU						
Temperature	°C	9	22.7	32	14.5	24.7	31.5
Ions							
Conductivity	µmhos/cm	210	394.3	640	107	276.9	556
Chloride (Total)	mg/L	14	18.3	23	8.8	22.0	49
Fluoride (Dissolved)	mg/L	1	1.7	3.6	0.3	1.2	3.2
Sulfate (Total)	mg/L	32	95.5	210	16	81.3	190
Calcium (Dissolved)	mg/L	21	37.2	57	10	34.4	63
Magnesium (Dissolved)	mg/L	8.2	16.2	35	4.5	14.0	21
Sodium (Dissolved)	mg/L	10	18.0	29	5.5	16.7	27
Potassium (Dissolved)	mg/L	1	2.5	4.1	1.9	3.6	6.3
Silica (Dissolved)	mg/L	2.8	5.7	11	0.4	5.7	21
Strontium (Dissolved)	µg/L	180	549.1	980	230	724.0	2000
Alkalinity and pH							
Alkalinity	mg/L as $CaCO_3$	45	--	45	34	65.3	104
pH	Std Units	6.4	7.3	9.1	5.8	7.0	9.1
Nutrients							
Ammonia	mg/L	0.01	0.1	0.8	0.01	0.1	0.14
Nitrite	mg/L as N	0.01	0.028	0.25	0.01	0.02	0.03
NO_2+NO_3	mg/L as N	0.24	1.0	2.61	0.03	0.7	1.7
TKN	mg/L	0.52	1.2	4.9	0.25	1.3	5.3
TON	mg/L as N	0.46	1.1	4.9	0.24	1.2	5.3
Total P	mg/L	0.07	1.8	5.2	0.68	1.7	7.1
Ortho-P	mg/L	0.03	1.7	4.8	0.6	1.1	2.3
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L	4.5	7.6	12.9	4.3	6.2	12.1
BOD	mg/L	0.8	1.5	2.6	1.2	2.2	3
TOC	mg/L as C	5.7	13.5	26	0.6	16.1	30
Chorophyll							
Chlorophyll a	mg/L	1.8	12.4	23			
Metals							
Iron	mg/L	70	295.6	840	70	359.1	1300
Aluminum	mg/L	30	180.0	430	70	220.0	700
Arsenic	mg/L	1	1.6	4	0(1)	1.4	3

NOTE:
(1) = value less than detection limit
'--' = indicates only one sample, and therefore no mean
Source: USGS, 2001b.

Table 3.6-5 - Comparison Summary of Water Quality Data Along Peace River (1991 - 1999).

Parameter	Units	Zolfo Springs			Arcadia		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters							
Streamflow	cfs						
Color	PCU	30	95.0	240	10	144.3	320
TDS	mg/L	137	204.0	261	44	184.9	379
TSS	mg/L				6	11.8	19
Turbidity	JTU						
Temperature	°C	13	24.8	30	11.5	24.3	33
Ions							
Conductivity	µmhos/cm	210	370.9	616	81	326.5	625
Chloride (Total)	mg/L	19	21.0	23	6.5	20.6	40
Fluoride (Dissolved)	mg/L	0.7	1.2	1.5	0.16	0.8	1.4
Sulfate (Total)	mg/L	31	63.6	100	8.6	58.0	150
Calcium (Dissolved)	mg/L	18	30.6	40	6.3	26.6	55
Magnesium (Dissolved)	mg/L	7.8	13.0	18	2.7	11.7	27
Sodium (Dissolved)	mg/L	16	21.4	28	3.8	17.5	29
Potassium (Dissolved)	mg/L	3.3	3.8	4.3	2.5	4.5	8
Silica (Dissolved)	mg/L	2.5	5.3	7.5	0.18	5.3	9.4
Strontium (Dissolved)	µg/L	2	308.9	520	230	645.3	2700
Alkalinity and pH							
Alkalinity	mg/L as $CaCO_3$	98	--	98	28	64.0	85
pH	Std Units	6	7.3	9.2	5.7	7.1	8.7
Nutrients							
Ammonia	mg/L	0.01	0.05	0.33	0.02	0.1	0.11
Nitrite	mg/L as N	0.01	0.02	0.08	0.01	0.014	0.03
NO_2+NO_3	mg/L as N	0.09	0.7	1.6	0.19	0.7	1.4
TKN	mg/L	0.51	1.1	2.5	0.5	1.0	1.7
TON	mg/L as N	0.49	1.1	2.5	0.46	1.0	1.7
Total P	mg/L	0.66	1.1	1.5	0.525	0.9	1.5
Ortho-P	mg/L	0.46	0.9	1.3	0.48	0.8	1.4
Oxygen and Oxygen Demand:							
Dissolved Oxygen	mg/L	3.8	7.3	12.6	3.9	6.6	12.4
BOD	mg/L						
TOC	mg/L as C	17	--	17			
Chorophyll							
Chlorophyll a	mg/L						
Metals							
Iron	mg/L	70	306.0	540	60	360.8	620
Aluminum	mg/L	60	116.0	210	60	164.6	280
Arsenic	mg/L	1	1.2	2	1	1.1	2

NOTE:
(1) = value less than detection limit
'--' = indicates only one sample, and therefore no mean
Source: USGS, 2001b.

Table 3.6-6 - Summary of Site-Specific Water Quality Data collected from 1976-1978.

Parameter	Units	Horse Creek MCC-1976			Brushy Creek MCC-1976			Oak Creek MCC-1976			Hickory FARMLAND 1977-1978		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters													
Streamflow	cfs	0.2	1.9	8	0.01	3.5	6.6	<0.1	0.5	2	0	53	540
Color	PCU	170	230	330	340	430	500	140	390	530			
Oil & Grease	mg/L	<5	<5	<5	<5	<5	<5	<5	<5	<5			
TSS	mg/L	<1	5	7	3	9	18	<1	10	26	< 5	12	116
TS	mg/L	100	140	250	130	160	200	110	190	280			
Turbidity	JTU	1	5	14	<1	9	32	1	6	21			
Temperature	°C	17	19	25	16	20	28	16	20	26			
Ions													
Conductivity	µmhos/cm	130	170	210	40	170	260	85	230	350	50	144	245
Chloride (Total)	mg/L												
Fluoride (Dissolved)	mg/L	0.33	0.38	0.47	0.33	0.38	0.47	0.2	0.3	0.41	0.08	0.32	0.88
Sulfate (Total)	mg/L	1	6	14	1	6	14	3	10	28			
Silica (Dissolved)	mg/L										0.2	3.6	12.2
Alkalinity and pH													
Alkalinity	mg/L as $CaCO_3$	23	37	69	14	31	54	4	4.4	100			
pH	Std Units	6.4	6.6	6.9	6	6.5	7	5.3	6	6.8	4.4	6.3	7.8
Nutrients													
Ammonia	mg/L	<0.05	0.08	0.11	<0.05	0.08	0.11	<0.05	0.14	0.27	< 0.03	0.06	0.22
Nitrite	mg/L	<0.1		0.3	<0.1		0.2	<0.1		0.2			
NO_2+NO_3	mg/L										0.004	0.08	0.29
TON	mg/L	0.3	0.5	0.8	0.3	0.5	0.8	0.6	1.3	2.4	0.14	1.4	3.3
Total P	mg/L	0.4	0.74	1.2	0.4	0.74	1.2	0.36	0.76	1.2	0.41	0.91	2.8
Ortho-P	mg/L	0.1	0.59	1.2	0.1	0.59	1.2	0.04	0.57	1	0.323	0.65	1.3
Oxygen and Oxygen Demand:													
Dissolved Oxygen	mg/L	6.8	8.3	10.6	6	7.6	9.6	0.4	2.2	6.6	0.2	6.9	12.2
BOD	mg/L	1.6	2.2	2.9	2.1	3.3	5.8	<1	2.6	4.4			
TOC	mg/L	6	20	31	6	20	31	24	39	52	5.8	28	50
Microbiology													
Total Coliform	MPN/100												
Fecal Coliforms	MPN/100	110	230	310	<10	130	260	<10	60	210	< 2	740	7500
Metals													
Iron	mg/L	0.2	0.6	1	0.2	0.8	1.6	0.7	0.8	1.8			
Aluminum	mg/L	<2	<2	<2	<2	<2	<2	<2	<2	<2			
Arsenic	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02			

Source:
MCC, 1977.
USEPA, 1981b.

Table 3.6-7 - Comparison of Water Quality for Ona Mine for 1998 - 2001 Monitoring.

Parameter	Units	Class III Surface Water Standard, F.A.C. 62-302	West Fork Horse Creek Ona SW-1				Horse Creek Ona SW-2				Horse Creek Ona SW-3				Brushy Creek Ona SW-4			
			Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count
General Parameters																		
Streamflow	cfs	ns	0.00	0.00	0.00	8	0.00	0.00	0.00	20	0.00	10.01	49.00	27	0.00	0.00	0.00	23
Color	PCU	ns	55.00	160.96	550.00	25	110.00	378.57	900.00	14	50.00	166.23	450.00	26	200.00	325.45	500.00	11
Oil & Grease	mg/L	5	2.80	--	2.80	1	1.00	1.90	2.80	2	1.50	2.05	2.60	2	1.60	2.20	2.80	2
TDS	mg/L	ns	75.00	150.84	213.00	25	68.00	154.64	298.00	14	65.00	151.15	225.00	26	84.00	147.18	219.00	11
NVSS	mg/L	ns	1.00	1.48	7.00	25	1.00	1.07	2.00	14	1.00	1.27	4.00	26	1.00	3.09	19.00	11
TSS	mg/L	ns	1.00	3.00	15.00	25	1.00	1.79	5.00	14	1.00	2.12	8.00	26	2.00	5.91	29.00	11
TS	mg/L																	
Turbidity	NTU	< 29 above background	1.00	3.38	16.40	25	1.10	3.68	12.10	14	0.90	3.15	15.70	26	2.10	4.09	6.90	11
Temperature	°C	ns	10.00	20.60	27.80	24	19.40	24.20	28.20	14	9.20	20.85	28.10	26	20.10	24.77	29.80	11
Ions																		
Conductivity	µmhos/cm	< 1275	53.00	167.88	276.00	25	58.00	115.64	192.00	14	50.00	170.42	258.00	26	55.00	110.91	169.00	11
Chloride (Total)	mg/L	ns	16.00	21.00	26.00	2	8.00	10.50	13.00	2	15.00	18.00	21.00	2	11.00	14.50	18.00	2
Fluoride (Dissolved)	mg/L	10	0.14	0.26	0.36	25	0.21	0.42	0.55	14	0.16	0.34	0.62	26	0.14	0.37	0.46	11
Sulfate (Total)	mg/L	ns	4.00	23.40	54.00	25	2.00	13.36	31.00	14	3.00	18.77	41.00	26	2.00	5.18	19.00	11
Calcium (Dissolved)	mg/L	ns	9.30	10.40	11.50	2	3.90	4.95	6.00	2	9.10	10.25	11.40	2	7.90	8.70	9.50	2
Magnesium (Dissolved)	mg/L	ns	4.70	6.20	7.70	2	2.20	3.60	5.00	2	4.50	5.70	6.90	2	3.60	4.30	5.00	2
Sodium (Dissolved)	mg/L	ns	5.10	6.75	8.40	2	15.80	16.20	16.60	2	7.20	8.43	9.65	2	5.30	6.90	8.50	2
Potassium (Dissolved)	mg/L	ns	4.80	6.97	9.13	2	0.20	1.20	2.20	2	3.40	4.66	5.91	2	0.70	0.70	0.70	2
Silica (Dissolved)	mg/L	ns	4.00	5.50	7.00	2	3.00	4.50	6.00	2	4.00	4.50	5.00	2	5.00	7.00	9.00	2
Alkalinity and pH																		
Alkalinity	mg/L as $CaCO_3$	> 20.0	22.00	--	22.00	1	15.00	--	15.00	1	31.00	--	31.00	1	24.00	24.00	24.00	1
pH	Std Units	6.5 - 8.0	5.27	6.54	7.31	25	5.04	6.07	6.44	14	5.24	6.72	7.42	26	5.56	6.14	6.55	11
Nutrients																		
Ammonia	mg/L	≤ 0.02	0.03	0.05	0.21	25	0.03	0.05	0.07	14	0.03	0.05	0.09	26	0.03	0.08	0.21	11
NOX	mg/L	ns	0.06	0.17	0.56	25	0.02	0.09	0.12	14	0.05	0.21	1.24	26	0.06	0.09	0.14	11
TKN	mg/L	ns	0.50	1.02	2.10	25	0.70	1.86	4.90	14	0.40	0.99	2.10	26	1.30	1.85	2.60	11
Total P	mg/L	ns	0.17	0.41	0.92	25	0.15	0.50	1.25	14	0.27	0.53	1.32	26	0.54	0.78	0.97	11
Ortho-P	mg/L	ns	0.14	0.32	0.79	25	0.14	0.43	1.15	14	0.22	0.44	1.25	26	0.24	0.62	0.93	11
Oxygen and Oxygen Demand:																		
Dissolved Oxygen	mg/L	> 5.0	2.70	6.49	8.20	25	3.40	5.19	6.90	14	4.60	6.81	8.30	26	2.80	4.16	5.90	11
BOD	mg/L	ns	1.40	--	1.40	1	1.00	1.15	1.30	2	1.00	1.05	1.10	2	1.80	1.85	1.90	2
COD	mg/L	ns	87.00	--	87.00	1	46.00	103.00	160.00	2	50.00	66.00	82.00	2	108.00	114.00	120.00	2
TOC	mg/L as C	ns	34.00	--	34.00	1	20.00	35.00	50.00	2	16.00	25.50	35.00	2	40.00	43.00	46.00	2
Chorophyll																		
Chlorophyll a	mg/L	ns	1.00	1.72	6.00	25	1.00	1.29	4.00	14	1.00	1.43	5.00	26	1.00	3.19	16.00	11
Pheophytin a	mg/m^3	ns	3.00	6.35	13.40	4	1.00	8.50	16.00	2	1.00	4.60	11.00	5	6.00	9.50	13.00	2
Radioactivity																		
Gross Alpha	pCi/L	≤ 15.0	1.00	1.97	4.80	18	1.00	1.66	3.20	12	1.00	1.83	4.30	19	1.00	2.04	4.80	10
Radium 226	pCi/L	≤ 5.0	0.70	1.03	1.50	7	0.50	0.78	1.00	4	0.50	0.96	1.50	8	0.50	0.70	1.00	3
Radium 228	pCi/L		0.10	--	0.10	1	0.00	0.05	0.10	2	0.00	0.00	0.00	2	0.00	0.00	0.00	2
Gross Beta	pCi/L	ns	4.10	--	4.10	1	3.00	3.15	3.30	2	3.40	3.50	3.60	2	2.60	2.85	3.10	2
Microbiology																		
Fecal Coliforms	MPN/100	< 200 Montly avg. < 400 in 10% < 800	300.00	--	300.00	1	2.00	151.00	300.00	2	2.00	86.00	170.00	2	80.00	--	80.00	1
Metals																		
Iron	mg/L	≤ 1.0	0.20	0.40	0.60	2	0.30	0.75	1.20	2	0.80	1.30	1.80	2	0.80	0.85	0.90	2

NOTE:

ns = no established standard

'--' = indicates only one sample, and therefore no mean

na = no analysis available

Source: IMC, 2002.

Table 3.6-7 - Comparison of Water Quality for Ona Mine for 1998 - 2001 Monitoring.

Parameter	Units	Class III Surface Water Standard, F.A.C. 62-302	Brushy Creek Ona SW-5				Oak Creek Ona SW-6				Oak Creek Ona SW-7				Hickory Creek Ona SW-8			
			Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count	Minimum	Mean	Maximum	Count
General Parameters																		
Streamflow	cfs	ns	0.00	0.00	0.00	18	0.00	0.00	0.00	24	0.00	0.00	0.00	22	0.00	0.00	0.00	22
Color	PCU	ns	125.00	247.69	370.00	13	240.00	298.89	350.00	9	250.00	306.25	450.00	12	120.00	295.50	550.00	10
Oil & Grease	mg/L	5	1.00	1.60	2.20	2	na	na	na	na	2.60	--	2.60	1	0.00		0.00	0
TDS	mg/L	ns	75.00	179.08	365.00	13	116.00	143.78	168.00	9	116.00	151.50	189.00	12	124.00	196.80	295.00	10
NVSS	mg/L	ns	1.00	2.00	6.00	13	1.00	1.00	1.00	9	1.00	1.00	1.00	12	1.00	1.50	4.00	10
TSS	mg/L	ns	1.00	3.77	13.00	13	1.00	1.22	3.00	9	1.00	2.25	6.00	12	1.00	2.70	7.00	10
TS	mg/L																	
Turbidity	NTU	< 29 above background	1.94	4.00	8.80	15	0.72	2.19	10.20	9	1.00	2.66	10.10	12	1.30	3.09	5.10	10
Temperature	°C	ns	18.80	24.17	28.90	15	21.10	24.09	28.60	9	18.80	23.48	28.60	12	21.30	25.13	28.50	10
Ions																		
Conductivity	µmhos/cm	< 1275	47.00	206.07	388.00	15	71.00	91.56	131.00	9	68.00	111.83	160.00	12	77.00	196.70	260.00	10
Chloride (Total)	mg/L	ns	10.00	17.00	24.00	2	20.00	--	20.00	1	8.00	13.50	19.00	2	22.00	--	22.00	1
Fluoride (Dissolved)	mg/L	10	0.03	0.32	0.53	13	0.14	0.29	0.36	9	0.16	0.30	0.38	12	0.13	0.27	0.37	10
Sulfate (Total)	mg/L	ns	3.00	19.15	76.00	13	1.00	1.89	5.00	9	1.00	4.00	10.00	12	3.00	15.50	26.00	10
Calcium (Dissolved)	mg/L	ns	7.30	10.70	14.10	2	6.30	--	6.30	1	8.20	8.50	8.80	2	13.00	--	13.00	1
Magnesium (Dissolved)	mg/L	ns	3.60	5.90	8.20	2	3.20	--	3.20	1	3.40	3.60	3.80	2	5.40	--	5.40	1
Sodium (Dissolved)	mg/L	ns	4.10	7.05	10.00	2	8.50	--	8.50	1	4.30	6.80	9.30	2	8.90	--	8.90	1
Potassium (Dissolved)	mg/L	ns	1.60	3.50	5.40	2	0.80	--	0.80	1	0.10	0.15	0.20	2	4.40	--	4.40	1
Silica (Dissolved)	mg/L	ns	3.00	3.50	4.00	2	6.00	--	6.00	1	4.00	4.50	5.00	2	2.00	--	2.00	1
Alkalinity and pH																		
Alkalinity	mg/L as $CaCO_3$	> 20.0	37.00	--	37.00	1	6.00	--	6.00	1	17.00	--	17.00	1	27.00	--	27.00	1
pH	Std Units	6.5 - 8.0	5.40	6.53	7.07	15	5.06	5.41	5.87	9	5.48	5.91	6.41	12	5.66	6.34	6.88	10
Nutrients																		
Ammonia	mg/L	≤ 0.02	0.03	0.08	0.22	13	0.03	0.05	0.08	9	0.03	0.06	0.25	12	0.04	0.13	0.40	10
NOX	mg/L	ns	0.02	0.15	0.69	13	0.04	0.06	0.10	9	0.02	0.06	0.09	12	0.06	1.71	7.95	10
TKN	mg/L	ns	1.20	1.62	2.80	13	1.60	1.91	2.50	9	1.60	2.08	2.90	12	1.20	2.26	3.40	10
Total P	mg/L	ns	0.26	0.48	1.05	13	0.25	0.46	0.98	9	0.34	0.68	1.31	12	0.27	0.57	1.09	10
Ortho-P	mg/L	ns	0.18	0.39	0.91	13	0.23	0.39	0.71	9	0.26	0.56	1.16	12	0.28	0.48	0.96	10
Oxygen and Oxygen Demand:																		
Dissolved Oxygen	mg/L	> 5.0	1.60	4.07	5.60	15	1.70	4.20	7.00	9	0.20	2.81	5.10	12	1.60	3.03	4.70	10
BOD	mg/L	ns	1.20	1.40	1.60	2	na	na	na	na	1.10	--	1.10	1	na	na	na	na
COD	mg/L	ns	76.00	87.00	98.00	2	na	na	na	na	96.00	--	96.00	1	na	na	na	na
TOC	mg/L as C	ns	32.00	36.00	40.00	2	na	na	na	na	39.00	--	39.00	1	na	na	na	na
Chorophyll															na	na	na	na
Chlorophyll a	mg/L	ns	1.00	4.77	15.00	13	1.00	2.11	6.00	9	1.00	4.00	15.00	12	1.00	3.80	8.00	10
Pheophytin a	mg/m^3	ns	4.00	7.80	13.40	3	9.00	--	9.00	1	6.00	7.50	9.00	2	10.00	--	10.00	1
Radioactivity																		
Gross Alpha	pCi/L	≤ 15.0	1.00	1.70	3.70	10	1.00	1.17	2.00	7	1.00	1.31	3.00	9	1.00	1.37	2.30	7
Radium 226	pCi/L	≤ 5.0	0.50	0.78	1.00	4	1.00	--	1.00	1	0.50	0.83	1.00	3	1.00	1.00	1.00	2
Radium 228	pCi/L		0.00	0.00	0.00	2	na	na	na	na	0.00	--	0.00	1	na	na	na	na
Gross Beta	pCi/L	ns	1.70	3.65	5.60	2	na	na	na	na	2.90	--	2.90	1	na	na	na	na
Microbiology																		
Fecal Coliforms	MPN/100	< 200 Montly avg. < 400 in 10% < 800	2.00	451.00	900.00	2	na	na	na	na	70.00	--	70.00	1	na	na	na	na
Metals																		
Iron	mg/L	≤ 1.0	0.50	0.60	0.70	2	0.50	--	0.50	1	0.70	0.83	0.95	2	0.70	--	0.70	1

NOTE:
ns = no established standard
'--' = indicates only one sample, and therefore no mean
na = no analysis available
Source: IMC, 2002.

Table 3.7-1 - Groundwater Elevations from Ona Mine in Onsite Well Clusters.

	Well Cluster[1]											
	Horse Creek - North			Horse Creek - South			Brushy Creek - South			Hickory Creek - South		
	ONA-1 Water Elevation ft MSL	ONA-2 Water Elevation ft MSL	ONA-3 Water Elevation ft MSL	ONA-4 Water Elevation ft MSL	ONA-5 Water Elevation ft MSL	ONA-6 Water Elevation ft MSL	ONA-7 Water Elevation ft MSL	ONA-8 Water Elevation ft MSL	ONA-9 Water Elevation ft MSL	ONA-10 Water Elevation ft MSL	ONA-11 Water Elevation ft MSL	ONA-12 Water Elevation ft MSL
Land Surface Elevation	110.6	110.2	110.1	96.5	94	93.9	81.7	81.7	81.5	103.4	103.3	103.2
Date												
3/26/99	101.36	106.66	105.77	70.19	86.94	89.63	73.38	77.18	77.32	93.96	98.46	98.60
4/29/99	100.34	109.64	109.25	73.11	86.12	89.5	72.23	75.61	77.49	91.99	97.84	98.07
5/23/99	99.75	106.93	106.09	74.32	86.25	89.14	70.98	75.15	76.8	91.47	97.38	97.55
6/23/99	100.21	109.62	108.78	75.7	88.61	92.03	70.85	78.83	80.6	92.39	98.3	98.63
7/28/99	100.93	109.98	109.24	78.1	88.94	92.23	71.54	78.96	81.1	93.77	99.15	99.45
8/29/99	101.55	109.79	108.71	79.8	89.11	92.29	72.39	79.71	80.9	96.62	101.35	101.52
9/28/99	101.32	110.02	109.47	60.61	89.14	93.01	72.95	79.38	81.01	96.85	101.35	101.58
10/1/99	--	--	--	60.74	--	--	--	--	--	--	--	--
10/27/99	101.26	107.82	107.27	61.86	88.02	90.85	73.44	78.92	--	--	--	--
11/10/99	100.96	107.36	107	62.28	88.02	90.98	73.54	78.73	78.83	97.47	101.09	101.16
12/14/99	99.91	105.66	105.52	62.29	87.02	89.87	73.32	77.56	77.67	95.52	99.54	99.65
1/13/00	99.39	105.19	105.23	61.46	87.14	90.13	73.25	77.87	78.18	95.44	99.25	99.94
2/10/00	98.97	104.18	104.28	61.5	87.07	89.8	72.95	77.75	77.95	95.21	99.48	99.55
3/29/00	98.45	102.57	102.44	59.33	86.02	88.81	71.7	75.77	79.6	92.78	98.46	98.7
4/21/00	96.83	102.47	102.51	57.17	85.66	88.72	70.69	74.89	76.21	91.96	97.74	97.94
5/12/00	96.35	106.05	104.54	55.43	85.01	87.99	69.64	73.94	75.81	90.98	97.12	97.35
6/15/00	94.87	102.44	102.64	52.24	84.12	87.34	67.77	72.72	75.19	89.18	96.3	96.6
7/28/00	94.24	101.71	102.79	51.16	85.96	89.92	67.01	74.23	77.95	90.52	96.99	97.28
8/29/00	94.25	103.37	103.63	52.38	85.99	89.27	66.78	73.49	77.46	92.06	97.35	97.61
9/22/00	93.98	100.7	103.43	54.02	87.76	91.77	67.24	75.68	80.8	93.83	99.45	99.91
10/27/00	93.91	98.07	100.57	55.53	86.48	89.86	68.52	74.95	77.88	93.31	97.97	98.2
11/30/00	93.52	96.17	98.84	55.72	85.96	89.54	68.29	73.58	77.22	91.96	97.18	97.42
12/24/00	93.52	96.56	98.41	55.36	85.47	88.88	67.8	73.02	76.47	91.44	96.79	97.05
2/23/01	92.99	96.96	98.21	53.12	84.85	88.41	66.55	72.24	75.43	89.94	96.1	96.39
3/30/01	92.74	96.55	97.64	52.39	85.24	91.43	66.45	72.52	77.93	90.14	96.55	97.02
4/11/01	92.6	97.16	98.24	52.17	86.4	90.23	66.21	74.19	77.78	91.68	97.85	98.1
5/19/01	92.07	96.70	97.65	51.03	84.64	88.49	66.06	72.23	75.62	--	96.59	96.89
6/24/01	92.2	97.71	98.41	50.21	86.84	92	65.93	74.36	81.06	93.72	100.76	101.22
7/31/01	94.73	102.4	105.56	52.15	89.17	92.62	68.88	79.05	81.36	96.85	102.27	102.37

[1]Notes: Wells Ona-1, Ona-4, Ona-7 and Ona-10 are in Upper Intermediate Aquifer
Wells Ona-2, Ona-5, Ona-8 and Ona-11 are in Phosphate Matrix
Wells Ona-3, Ona-6, Ona-9 and Ona-12 are in Surficial Aquifer
See Figure 3.7-3 for Well Locations.
See Figure 3.7-4(a-d) for Water Level Graphs from IMC Well Clusters
-- = No Data Available
ft MSL = Feet above Mean Sea Level

Source: IMC, 2002.

Table 3.7-2 - Results of Slug Test Conducted in Ona Mine Wells.

Well #	Test Date	Test Type[1]	Radius of Casing (feet)	Porosity of Sandpack	Radius of Borehole (feet)[2]	Total Depth (feet)	Ht. Of WT Above Botton of Well (feet)	Base of Aquifer (feet)	Ht of WT Above Base of Aquifer (feet)	Total Screen Length (feet)	Saturated Screen length (feet)	Hydraulic Conductivity (ft/day)
ONA-1	8/27/99	FH	0.08	0.3	0.229	136	124.51	Unknown	186.765	10	10	1.4
ONA-2	8/27/99	RH	0.08	0.3	0.242	50	46.5	84	80.5	10	10	3.8
ONA-3	8/27/99	RH	0.08	0.3	0.229	22	17.75	22	17.75	18	17.75	2.2
ONA-4	8/27/99	FH	0.08	0.3	0.396	137	120.39	Unknown	180.585	10	10	0.4
ONA-5	8/27/99	RH	0.08	0.3	0.242	67	59.4	80	72.4	10	10	10.7
ONA-6	8/27/99	RH	0.08	0.3	0.292	8	3.67	8	3.67	5	3.67	15.5
ONA-7	8/27/99	FH	0.08	0.3	0.396	107	95.4	Unknown	143.1	10	10	1
ONA-8	8/27/99	RH	0.08	0.3	0.396	75	70.5	99	94.5	10	10	6.2
ONA-9	8/27/99	RH	0.08	0.3	0.242	8	4.07	8	4.07	6	4.07	6.5
ONA-10	8/27/99	FH	0.08	0.3	0.396	90	73.34	Unknown	110.01	10	10	2
ONA-11	8/27/99	RH	0.08	0.3	0.242	57	52.37	80	75.37	10	10	11
ONA-12	8/27/99	RH	0.08	0.3	0.292	24	19.15	24	19.15	20	19.15	25.9

[1]Note: RH = Rising Head Slug Test, FH = Falling Head Slug Test
[2]Note: 5½" Bit = .229 ft
5 7/8" Bit = .242 ft
7" Bit = .292 ft
9½" Bit = .396 ft
10" Bit = .417 ft

Source: IMC, 2002.

Table 3.7-3 - Summary of Aquifer Characteristics on or Near Ona Mine Site.

Parameter	Surficial Aquifer	Intermediate Aquifer	Floridan Aquifer
Aquifer Thickness (ft)	10-80	150-300	1200
Porosity	0.3	--	--
Hydraulic Conductivity (ft/day)	10-20	--	--
Transmissivity (ft^2/day)	200-1,700	6,000	130,000-200,000
Storage Coefficient	0.01-0.2	0.001-0.002	0.0004-0.0008
Well Yield (gpm)	5-50	50-200	1,000-3,000

Note:

-- = No Data Available

Source: IMC, 2002.

Table 3.7-4 - Statistical Summary of Physical and Chemical Constituents in Surficial Aquifer Water in the Horse Creek Basin, 1993-1995.

Parameter	Units	Watkins Road Well (Site W1)			Mitchell Hammock Well (Site W2)			Lettis Well (Site W3)			West Fork Horse Creek (site W4)		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters													
Color	PCU	<5	--	420	5	--	500	15	--	40	<5	--	20
TDS	mg/L	2	--	34	92	--	104	42	--	101	8	--	28
Ions													
Conductivity	µmhos/cm	41	--	320	90	160	293	82	103	147	21	35.8	45
Chloride (Dissolved)	mg/L	0.15	--	69	0.94	17.4	34	1.5	7.5	19	1.6	3.9	5.2
Fluoride (Dissolved)	mg/L	0.2	--	0.2	<0.1	--	0.6	<0.1	--	0.3	<.10	--	<.10
Sulfate (Total)	mg/L	2.5	--	7.2	4	8.2	11	5.5	17.4	26	2.7	4.2	6.5
Calcium (Dissolved)	mg/L	1.1	--	2.2	1.4	--	13	3.1	--	10	0.9	--	2.3
Magnesium (Dissolved)	mg/L	0.34	--	0.7	1.7	--	6	2.8	--	3.6	0.42	--	6.2
Sodium (Dissolved)	mg/L	0.87	--	1.5	6.4	--	19	2.7	--	6.7	1.6	--	1.9
Potassium (Dissolved)	mg/L	<0.1	--	<0.1	0.15	--	0.21	3	--	8.1	<.10	--	0.22
Silica (Dissolved)	mg/L	1.4	--	2.8	6.2	--	12	4.8	--	6.6	0.8	--	2.3
Strontium (Dissolved)	µg/L	20	--	53	<1.0	--	11	6	--	13	5	--	36
Alkalinity and pH									--				
Alkalinity	mg/L as $CaCO_3$	<1.0	--	24	<1.0	21.4(1)	48	6.6	10.6	23	<.50	--	5.6
pH	Std Units	4.7	--	5.8	5	5.75	6.2	5	5.5	6	4.8	5.4	6.5
Nutrients													
Ammonia	mg/L	0.03	--	0.05	0.1	--	0.11	0.04	--	0.05	<.20	--	4.9
NO_2+NO_3	mg/L as N	0.02	--	0.06	0.02	--	0.05	<0.02	--	0.02	<.20	--	<.20
TKN	mg/L	0.27	--	4.2	0.54	--	1.1	0.2	--	0.59	0.02	--	0.02
Total P	mg/L	0.08	--	3.1	0.25	--	3.9	0.21	--	2	<.20	--	11
Ortho-P	mg/L	0.06	--	0.16	0.2	--	0.5	0.16	--	0.56	0.02	--	0.07

NOTE:
-- = No Data Available
(1) = Mean value is estimated using a log-probability regression to predict the values below the detection limit.
Source: USGS, 1997.

Table 3.7-4 - Statistical Summary of Physical and Chemical Constituents in Surficial Aquifer Water in the Horse Creek Basin, 1993-1995.

Parameter	Units	Brushy Creek Well (Site W5)			Carlton Well (Site W6)			West Fork Buzzard Roost Well (Site W7)			Buzzard Roost Well (Site W8)		
		Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Maximum
General Parameters													
Color	PCU	200	--	240	260	--	580	20	--	640	70	--	440
TDS	mg/L	168	--	237	119	--	146	217	--	451	64	--	138
Ions													
Conductivity	µmhos/cm	141	--	236	45	60	71	133	321	578	44	74.7	93
Chloride (Dissolved)	mg/L	18	23	28	0.12	2.96	12	6.9	64.5	120	0.25	3.8	6.7
Fluoride (Dissolved)	mg/L	0.1	--	0.2	0.3	--	0.4	<.10	--	<.10	--	--	--
Sulfate (Total)	mg/L	15	--	52	0.4	4.29	10	0.6	6.87	14	0.5	5.8(1)	13
Calcium (Dissolved)	mg/L	13	--	28	9.4	--	10	3.2	--	22	1.1	--	3.1
Magnesium (Dissolved)	mg/L	0.94	--	1.2	0.72	--	0.94	3.9	--	5.8	0.88	--	2
Sodium (Dissolved)	mg/L	5	--	6.4	1	--	2.8	41	--	57	1.9	--	4.7
Potassium (Dissolved)	mg/L	2.3	--	3.8	0.78	--	2.3	3.5	--	4.6	3.9	--	14
Silica (Dissolved)	mg/L	5.8	--	6	3.9	--	9.4	1	--	3.8	0.9	--	6.2
Strontium (Dissolved)	µg/L	46	--	83	20	--	24	10	--	45	4	--	9
Alkalinity and pH													
Alkalinity	mg/L as $CaCO_3$	--	--	--	<1.0	7.6(1)	13	<.1	--	7.8	4.3	--	13
pH	Std Units	4.1	--	5.6	4.4	5.2	5.7	5.4	--	5.9	5.1	--	6
Nutrients													
Ammonia	mg/L	0.04	--	0.1	0.17	--	0.18	0.04	--	0.04	0.03	--	0.09
NO_2+NO_3	mg/L as N	0.17	--	0.25	<.02	--	0.27	<0.02	--	0.02	--	<0.02	--
TKN	mg/L	1.5	--	1.9	1.6	--	2.7	<.2	--	2.2	0.68	--	2
Total P	mg/L	0.25	--	0.37	0.79	--	1.5	0.02	--	0.07	0.09	--	0.26
Ortho-P	mg/L	0.22	--	0.34	0.75	--	1.3	--	--	--	0.07	--	0.17

NOTE:
-- = No Data Available
(1) = Mean value is estimated using a log-probability regression to predict the values below the detection limit.
Source: USGS, 1997.

Table 3.7-5 - Summary of Groundwater Quality Analysis on Ona Property in 1976

Parameter	Units	Surficial Aquifer System	Upper Floridan Aquifer	Lower Floridan Aquifer
General Parameters				
TDS	mg/L	48-98	343-360	244-292
Turbidity	JTU	78	0.1-0.6	0.1-2.1
Temperature	°C	25	24.4(1)	25-28.5
Hardness	mg/L	10-24	208-212	190-206
Dissolved Ions				
Conductivity	µmhos/cm	67-116	490-515	375-410
Chloride	mg/L	5-14	34-43	8-11
Fluoride	mg/L	0.2-1.4	3.1-5	0.48-0.52
Sulfate	mg/L	1-12	10-38	31-60
Calcium	mg/L	2.4-18	38.1-45.8	51-53
Magnesium	mg/L	0.5-2.9	24-27	14-18
Sodium	mg/L	3.6-17.6	18-24	5.4-6.8
Potassium	mg/L	0.26-6.72	2.8-3.0	1.2-1.6
Alkalinity and pH				
Alkalinity	mg/L as $CaCO_3$	10-48	159-177	140-148
pH	Std Units	5.3-6.5	7.0-7.3	7.4-7.6
Nutrients				
Nitrate	mg/L as N	0.07-9.7	0.03-0.04	0.001-0.1
Phosphate	mg/L	0.4-6.06	<0.01(1)	<0.01-0.04
Total P	mg/L	0.4	0.01	0.01-0.032
Radioactivity				
Gross Alpha	pCi/L	10.4+/-6.0	--	8.7+/-4.9 - 18.3+/-5.4
Radium 226	pCi/L	1.8+/-0.04	7.05+/-0.1	1.11+/-0.05 - 1.8+/-0.04
Metals				
Iron	mg/L	0.3-2.2	<0.1(1)	--

NOTE:
(1) = no range available as multiple samples have same value
-- = no data
Source: USEPA, 1981.

Table 3.7-6 - Summary of Groundwater Quality on or Near the Ona Mine Site

Parameter	Units	Surficial Aquifer		Intermediate Aquifer		Floridan Aquifer	
		Min	Max	Min	Max	Min	Max
pH	Std Units	5.1	8.6	7.2	11.6	7.9	8
Temperature	°C	23	25	23	25	25.6	26.8
Conductivity	µmhos/cm	51	610	320	5538	480	620
Total Coliform	#/100 mL	0	0	0	0	--	--
E Coli	#/100 mL	0	0	0	0	--	--
Aluminum	mg/L	0.1	1.9	0.1	5.7	--	--
Dissolved Aluminum	mg/L	0.1	0.9	0.1	0.2	--	--
Calcium	mg/L	2.7	84	32	155	49.8	70.9
Iron	mg/L	0.23	6.3	0.054	2.1	0.05	<0.1
Dissolved Iron	mg/L	0.023	0.58	0.011	0.034	--	--
Magnesium	mg/L	0.76	31	0.11	30	23	32.4
Manganese	mg/L	0.007	0.11	0.005	0.038	<0.01	<0.03
Potassium	mg/L	0.2	5.1	1.6	402	2	3.2
Sodium	mg/L	3.9	32	14	151	10.9	18.8
Zinc	mg/L	0.005	0.046	0.005	0.019	--	--
NOX	mg/L	0.02	2	0.02	0.02	--	--
Total Nitrogen	mg/L	0.14	3.4	0.38	3	0.2	2.4
TOC	mg/L	3.3	33	4.2	15	<1.0	8.2
Total Phosphorus	mg/L	0.1	2.3	0.1	5.1	<0.05	<0.1
Gross Alpha	pCi/L	1.8	180	4	41.1	3+/-5	3.6+/-0.9
Dissolved Gross Alpha	pCi/L	1.3	79	3	24.8	--	--
Radium 226	pCi/L	0.5	2.5	0.8	7.3	1.5+/-.1	--
Dissolved Radium 226	pCi/L	0.5	1.1	0.5	4.1	--	--
Radium 228	pCi/L	0	1.2	0.2	0.9	<0.5+/-0.5	--
Dissolved Radium 228	pCi/L	0	0.2	0	0.8	--	--
Alkalinity	mg/L $CaCO_3$	4.5	250	167	1000	146	162
Chloride	mg/L	5.5	52	5.5	106	10.9	14
Color	PCU	0	100	0	15	<5.0	<5.0
Fluoride	mg/L	0.2	1.2	0.76	3.7	0.9	1.3
Silica	mg/L	6.2	37	12	47	--	--
Sulfate	mg/L	1	42	1	32	131	191
Surfactants	mg/L	0.02	0.13	0.02	0.05	--	--
TDS	mg/L	56	334	240	1270	430	446
Turbidity	NTU	8.5	80	2	330	0.18	0.28

Source: IMC, 2002; Farmland, 2000.

Table 3.7-7 - Groundwater Quality Collected at the Ona Mine Clusters

Parameter	Units	Surficial Aquifer System								
		Ona-3		Ona Dupe-2	Ona-6		Ona-9		Ona-12	
		31-Aug-99	13-Dec-99	31-Aug-99	31-Aug-99	13-Dec-99	31-Aug-99	14-Dec-99	31-Aug-99	14-Dec-99
pH	Std Units	5.5	5.35		7.8	5.68	6.2	7.4	5.1	5.4
Temperature	°C		24			23		23		24
Conductivity	umhos/cm	90	51		320	158	220	170	140	87
Total Coliform	#/100 mL	P		P	P		P		P	
E Coli	#/100 mL	A		P	A		A		A	
Aluminum	mg/L	0.5	0.4	0.5	0.4	0.4	1.9	0.9	0.9	0.3
Dissolved Aluminum	mg/L		0.3			0.2		0.9		0.1
Calcium	mg/L	4.4	2.7	4.4	22	11	22	19	4.1	2.9
Iron	mg/L	1.2	0.3	1.3	6.3	1.3	1.5	2	3.5	3.6
Dissolved Iron	mg/L		0.1			0.58		0.052		0.53
Magnesium	mg/L	1.2	0.76	1.2	6.2	4.5	2.3	6.3	2.4	1.6
Manganese	mg/L	0.007	0.007	0.008	0.11	0.007	0.063	0.019	0.027	0.008
Potassium	mg/L	0.36	0.25	0.35	5.1	3.4	3.8	0.48	0.2	0.24
Sodium	mg/L	5	3.9	5.1	20	7.4	24	10	8.4	8.4
Zinc	mg/L	0.005	0.006	0.005	0.005	0.011	0.041	0.046	0.015	0.005
NOX	mg/L	0.02		0.02	0.04		2		0.02	
Total Nitrogen	mg/L	0.48		0.32	1.8		3.4		0.64	
TOC	mg/L	7.1		7.6	33		19		13	
Total Phosphorus	mg/L	0.58		0.5	0.1		0.24		1.3	
Gross Alpha	pCi/L	13.1	9.9	13.9	14	3.7	9.7	4.6	47.2	180
Dissolved Gross Alpha	pCi/L		4.1			3.9		3.5		79
Radium 226	pCi/L	1.3	1.2		1.2	0.8	0.9	0.8	2.5	1.9
Dissolved Radium 226	pCi/L		0.6			0.8		0.7		1.1
Radium 228	pCi/L	0.3	0.3	1.2	0.2	0	0.2	0.1	0.3	0.2
Dissolved Radium 228	pCi/L		0	0.2		0.1		0.2		0.2
Alkalinity	mg/L $CaCO_3$	4.5		5.1	63		60		8.1	
Chloride	mg/L	8		7.5	15		5.5		7.5	
Color	PCU	5		10	100		40		15	
Fluoride	mg/L	0.42		0.36	0.2		0.6		0.3	
Silica	mg/L	6.2		6.6	9.2		16		9.1	
Sulfate	mg/L	10		11	36		42		18	
Surfactants	mg/L	0.02		0.02	0.13		0.02		0.08	
TDS	mg/L	58		70	186		182		56	
Turbidity	mg/L	10		8.5	80		51		19	
Water Elevation	ft MSL	109.41			93.06		79.2		100.56	

Notes:

The equipment blank was positive for total coliform.
Iron was detected in the equipment blank at 0.05 mg/l; any reading below 0.25 mg/l was qualified as estimated.
Manganese was detected in the equipment blank at 0.008 mg/l; any reading above 0.04 mg/l was qualified as estimated.
Potassium was detected in the equipment blank at 0.06 mg/l; any reading below 0.3 mg/l was qualified as estimated.
Sodium was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Zinc was detected in the equipment blank at 0.02 mg/l; any reading below 0.1 mg/l was qualified as estimated.
Total nitrogen was detected in the equipment blank at 0.36 mg/l; any reading below 1.8 mg/l was qualified as estimated.
Total organic carbon was detected in the equipment blank at 2.9 mg/l; any reading below 14.5 mg/l was qualified as estimated.
Gross Alpha and Radium 226 95% confidence intervals were both above zero, but the lower bound was less than 0.5 pCi/L.
Alkalinity in the equipment blank was determined to be 4.5 mg/l; any reading below 22.5 mg/l was qualified as estimated.
Chloride was detected in the equipment blank at 0.5 mg/l; any reading below 2.5 mg/l was qualified as estimated.
Fluoride was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Silica was detected in the equipment blank at 1 mg/l; any reading below 5 mg/l was qualified as estimated.
A reading of 0.73 NTU's was determined on the equipment blank; any reading below 3.65 NTU was qualified as estimated.
E Coli was detected in the duplicate, but not in the original sample.
Ona-7 was a turbid sample.
Wells Ona-4 and Ona-8 appear to be affected by residuals from the drilling process

Source: IMC, 2002.

Table 3.7-7 - Groundwater Quality Collected at the Ona Mine Clusters

Parameter	Units	Surficial (Matrix) Aquifer System							
		Ona-2		Ona-5		Ona-8		Ona-11	
		31-Aug-99	13-Dec-99	31-Aug-99	13-Dec-99	31-Aug-99	14-Dec-99	31-Aug-99	14-Dec-99
pH	Std Units	6.7	6.06	8.4	8.6	7.9	8.19	7.1	6.51
Temperature	°C		24		25		24		23
Conductivity	umhos/cm	120	115	440	418	420	610	160	112
Total Coliform	#/100 mL	P		P		P		P	
E Coli	#/100 mL	A		A		A		A	
Aluminum	mg/L	0.5	0.2	0.1	0.1	0.6	0.8	0.2	0.2
Dissolved Aluminum	mg/L		0.1		0.1		0.1		0.1
Calcium	mg/L	12	12	44	45	84	76	11	9.8
Iron	mg/L	1.7	1.5	2.6	2.2	0.23	0.35	1.1	0.75
Dissolved Iron	mg/L		0.052		0.023		0.027		0.079
Magnesium	mg/L	4.2	4.3	25	27	31	30	3.9	3.8
Manganese	mg/L	0.02	0.023	0.051	0.04	0.009	0.009	0.009	0.007
Potassium	mg/L	1.1	1.1	0.62	0.71	1.5	1.4	0.68	2.1
Sodium	mg/L	4.2	4.2	6.5	6.7	32	29	5.1	5.6
Zinc	mg/L	0.007	0.014	0.008	0.006	0.006	0.016	0.005	0.013
NOX	mg/L	0.02		0.02		0.02		0.02	
Total Nitrogen	mg/L	0.5		0.44		0.45		0.14	
TOC	mg/L	6.9		3.3		5.9		3.6	
Total Phosphorus	mg/L	2.3		0.1		0.64		2	
Gross Alpha	pCi/L	2.3	1.8	5	2.1	5.4	3.2	2.3	3.6
Dissolved Gross Alpha	pCi/L		1.3		3.1		3.4		2.6
Radium 226	pCi/L	0.5	0.7	0.7	0.6	0.9	0.9	0.5	0.7
Dissolved Radium 226	pCi/L		0.5		0.7		0.8		0.5
Radium 228	pCi/L	0	0	0.1	0	0.1	0.2	0	0
Dissolved Radium 228	pCi/L		0		0.1		0.2		0
Alkalinity	mg/L $CaCO_3$	44		214		250		38	
Chloride	mg/L	8		12		52		6.5	
Color	PCU	5		5		5		0	
Fluoride	mg/L	0.96		0.38		1.2		0.79	
Silica	mg/L	19		37		21		32	
Sulfate	mg/L	2.2		1		8.7		1	
Surfactants	mg/L	0.02		0.02		0.02		0.02	
TDS	mg/L	72		264		334		58	
Turbidity	mg/L	15		25		58		12	
Water Elevation	ft MSL	109.89		88.91		79.29		100.47	

Notes:

The equipment blank was positive for total coliform.
Iron was detected in the equipment blank at 0.05 mg/l; any reading below 0.25 mg/l was qualified as estimated.
Manganese was detected in the equipment blank at 0.008 mg/l; any reading above 0.04 mg/l was qualified as estimated.
Potassium was detected in the equipment blank at 0.06 mg/l; any reading below 0.3 mg/l was qualified as estimated.
Sodium was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Zinc was detected in the equipment blank at 0.02 mg/l; any reading below 0.1 mg/l was qualified as estimated.
Total nitrogen was detected in the equipment blank at 0.36 mg/l; any reading below 1.8 mg/l was qualified as estimated.
Total organic carbon was detected in the equipment blank at 2.9 mg/l; any reading below 14.5 mg/l was qualified as estimated.
Gross Alpha and Radium 226 95% confidence intervals were both above zero, but the lower bound was less than 0.5 pCi/L.
Alkalinity in the equipment blank was determined to be 4.5 mg/l; any reading below 22.5 mg/l was qualified as estimated.
Chloride was detected in the equipment blank at 0.5 mg/l; any reading below 2.5 mg/l was qualified as estimated.
Fluoride was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Silica was detected in the equipment blank at 1 mg/l; any reading below 5 mg/l was qualified as estimated.
A reading of 0.73 NTU's was determined on the equipment blank; any reading below 3.65 NTU was qualified as estimated.
E Coli was detected in the duplicate, but not in the original sample.
Ona-7 was a turbid sample.
Wells Ona-4 and Ona-8 appear to be affected by residuals from the drilling process

Source: IMC, 2002.

Table 3.7-7 - Groundwater Quality Collected at the Ona Mine Clusters

Parameter	Units	Intermediate Aquifer System								Equip. Blank
		Ona-1		Ona-4		Ona-7		Ona-10		Ona EB-1
		31-Aug-99	13-Dec-99	31-Aug-99	13-Dec-99	31-Aug-99	14-Dec-99	31-Aug-99	14-Dec-99	31-Aug-99
pH	Std Units	7.2	7.62	11	11.6	8.1	7.22	7.2	7.39	
Temperature	°C		24		25		24		23	
Conductivity	umhos/cm	360	445	1000	5538	400	637	320	356	
Total Coliform	#/100 mL	P		A		A		P		P
E Coli	#/100 mL	A		A		A		A		A
Aluminum	mg/L	0.6	0.7	0.3	0.2	5.7	1.2	0.1	0.1	0.1
Dissolved Aluminum	mg/L		0.1		0.2		0.1		0.1	
Calcium	mg/L	70	63	119	155	122	68	38	32	0.32
Iron	mg/L	0.55	0.53	0.24	0.054	2.1	0.39	0.19	0.088	0.049
Dissolved Iron	mg/L		0.023		0.034		0.011		0.025	
Magnesium	mg/L	30	28	3.8	0.11	27	19	16	17	0.05
Manganese	mg/L	0.019	0.012	0.013	0.005	0.038	0.01	0.012	0.005	0.008
Potassium	mg/L	4.3	2.3	356	402	3.6	2.2	2	1.6	0.06
Sodium	mg/L	19	18	131	151	41	42	14	14	1.3
Zinc	mg/L	0.005	0.019	0.006	0.019	0.014	0.008	0.009	0.006	0.015
NOX	mg/L	0.02		0.02		0.02		0.02		0.02
Total Nitrogen	mg/L	0.38		3		1.3		0.41		0.36
TOC	mg/L	5.2		15		4.2		7.2		2.9
Total Phosphorus	mg/L	1.1		0.1		5.1		0.1		0.1
Gross Alpha	pCi/L	9.4	6.6	12.4	40.5	41.1	5.4	4.2	4	1.3
Dissolved Gross Alpha	pCi/L		3		24.8		3.2		3.8	
Radium 226	pCi/L	2	1.3	3.2	5.8	7.3	0.9	0.8	1.6	0.3
Dissolved Radium 226	pCi/L		0.6		4.1		0.5		1	
Radium 228	pCi/L	0.3	0.3	0.7	0.6	0.9	0.2	0.2	0.6	0
Dissolved Radium 228	pCi/L		0		0.8		0		0.3	
Alkalinity	mg/L $CaCO_3$	233		1000		167		177		4.5
Chloride	mg/L	10		25		106		5.5		0.5
Color	PCU	0		15		5		5		0
Fluoride	mg/L	2.4		0.76		3.7		1.1		0.13
Silica	mg/L	47		16		12		29		1
Sulfate	mg/L	1		32		10		1		1
Surfactants	mg/L	0.02		0.05		0.02		0.02		0.02
TDS	mg/L	402		1270		350		240		2
Turbidity	mg/L	44		75		330		2		0.73
Water Elevation	ft MSL	101.47		59.36		72.39		96.23		

Notes:

The equipment blank was positive for total coliform.
Iron was detected in the equipment blank at 0.05 mg/l; any reading below 0.25 mg/l was qualified as estimated.
Manganese was detected in the equipment blank at 0.008 mg/l; any reading above 0.04 mg/l was qualified as estimated.
Potassium was detected in the equipment blank at 0.06 mg/l; any reading below 0.3 mg/l was qualified as estimated.
Sodium was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Zinc was detected in the equipment blank at 0.02 mg/l; any reading below 0.1 mg/l was qualified as estimated.
Total nitrogen was detected in the equipment blank at 0.36 mg/l; any reading below 1.8 mg/l was qualified as estimated.
Total organic carbon was detected in the equipment blank at 2.9 mg/l; any reading below 14.5 mg/l was qualified as estimated.
Gross Alpha and Radium 226 95% confidence intervals were both above zero, but the lower bound was less than 0.5 pCi/L.
Alkalinity in the equipment blank was determined to be 4.5 mg/l; any reading below 22.5 mg/l was qualified as estimated.
Chloride was detected in the equipment blank at 0.5 mg/l; any reading below 2.5 mg/l was qualified as estimated.
Fluoride was detected in the equipment blank at 1.3 mg/l; any reading below 6.5 mg/l was qualified as estimated.
Silica was detected in the equipment blank at 1 mg/l; any reading below 5 mg/l was qualified as estimated.
A reading of 0.73 NTU's was determined on the equipment blank; any reading below 3.65 NTU was qualified as estimated.
E Coli was detected in the duplicate, but not in the original sample.
Ona-7 was a turbid sample.
Wells Ona-4 and Ona-8 appear to be affected by residuals from the drilling process

Source: IMC, 2002.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
2	Zolfo fine sand	This is a somewhat poorly drained, nearly level soil on broad ridges and knolls on uplands. Typically, the surface layer is dark grayish brown fine sand about 7 inches thick. The subsurface layer is fine sand about 56 inches thick. It is grayish brown in the upper 21 inches, very pale brown in the middle 17 inches, and light brownish gray in the lower 18 inches. The subsoil is dark brown fine sand to a depth of 68 inches and black fine sand to a depth of 80 inches or more	2.0 - 3.5	June - Nov.	0 - 7 7 - 63 63 - 80	6.0 - 20 6.0 - 20 0.6 - 2.0	C	Severe: Seepage
3	Fort Green fine sand	This is a gently sloping, poorly drained soil on side slopes adjacent to flood plains and depressions. The individual areas are mostly long and narrow and generally are parallel to the flood plains or are adjacent to the depressions. The individual areas range from 5 to 20 acres in size. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer in the upper part is grayish brown fine sand 11 inches thick and in the lower part is light brownish gray fine sand 14 inches thick. The subsoil is light gray to a depth of 80 inches. The upper 11 inches is cobbly sandy clay loam, the middle 10 inches is sandy clay loam, and the lower 28 inches is fine sandy loam.	0 - 1.0	June - Sept.	0 - 17 17 - 31 31 - 42 42 - 80	6.0 - 20 6.0 - 20 0.06 -0.6 0.06 -0.6	D	Severe: Seepage, Wetness
7	Basinger fine sand	This is a poorly drained, nearly level soil in poorly defined drainageways and sloughs in the flatwoods. Individual areas are irregular in shape and range from 5 to 25 acres. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is black and dark gray fine sand about 7 inches thick. The next layer is dark brown fine sand mixed with grayish brown fine sand to a depth of 24 inches. The substratum is brown fine sand to a depth of 30 inches and light gray fine sand to a depth of 80 inches.	0 - 1.0	June - Feb.	0 -14 14 - 30 30 - 80	>20 >20 >20	B/D	Severe: Seepage, Piping, Wetness.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
8	Bradenton loamy fine sand	This is a poorly drained, nearly level soil along streams and rivers and on low-lying ridges and hammocks in flood plains. Individual areas are long and narrow, generally are adjacent to streams, and range from 5 to 20 acres in size. Typically, the surface layer is very dark gray loamy fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 15 inches. The upper 7 inches is gray, and the lower 8 inches is grayish brown. The subsoil is light gray sandy clay loam about 21 inches thick. The substratum is light brownish gray sandy loam to a depth of 66 inches and light gray loamy sand to a depth of 80 inches.	0 - 1.0	June - Dec.	0 - 4 4 - 19 19 - 40 40 - 80	6.0 - 20 6.0 - 20 0.6 - 2.0	D	Severe: Seepage
9	Popash mucky fine sand	This is a nearly level, very poorly drained soil in intermittent ponds. Slopes are smooth to concave and are less than 1 percent. Typically, the surface layer is black. The upper 10 inches is mucky fine sand, and the lower 11 inches is fine sand. The subsurface layer is gray fine sand to a depth of 52 inches. The subsoil is light brownish gray sandy loam to a depth of 80 inches or more.	+2 -1.0	June - Mar.	0 - 10 10 - 21 21 - 52 52 - 80	6.0 - 20 6.0 - 20 6.0 - 20 <0.2	D	Severe: Seepage
10	Pomona fine sand	This is a nearly level, poorly drained soil in large areas on low ridges in the flatwoods. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is black fine sand about 3 inches thick. The subsurface layer is fine sand about 24 inches thick. The upper 7 inches is gray, and the lower 17 inches is light gray. The subsoil extends to a depth of 80 inches. The upper 8 inches is dark reddish brown fine sand coated with organic matter, the middle 22 inches is brown fine sand, and the lower 23 inches is gray fine sandy loam.	0 - 1.0	July - Sept.	0 - 3 3 - 27 27 - 46 46 - 57 57 - 80	6.0 - 20 6.0 - 20 0.6 - 2.0 6.0 - 20 0.2 - 6.0	B/D	Severe: Seepage

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
11	Felda fine sand	This complex consists of soils in broad sloughs where stream channels are poorly defined and soils around some larger ponds. Permeability is rapid in the surface and subsurface layers. The surface layer of Felda soils is very dark gray fine sand about 3 inches thick. The subsurface layer is grayish brown fine sand 21 inches thick. Surface layer in Palmetto soils is black sand about 8 inches thick. The subsurface layer is dark gray or gray sand to a depth of 25 inches.	0 - 1.0	July - March	0 - 31 31 - 58 58 - 80	6.0 - 20 0.6 - 6.0 6.0 - 20	B/D	Severe: Seepage, Piping, Wetness.
12	Felda fine sand, frequently flooded	Nearly level, poorly drained soils along the small streams and creeks throughout the county. Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 26 inches. The upper 5 inches is grayish brown, and the lower 16 inches is light gray. The subsoil is sandy loam about 22 inches thick. The upper 10 inches is gray, and the lower 12 inches is grayish brown. The substratum is light gray fine sand to a depth of 80 inches.	0 -1.0	July - Mar.	0 - 26 26 - 48 48 - 80	6.0 - 20 0.6 - 6.0 6.0 - 20	B/D	Severe: Seepage, Piping, Wetness.
13	Floridana mucky fine sand, depressional	Nearly level, very poorly drained soil in wet depressions. Slopes are smooth to concave and are less than 2 percent. Typically, the surface layer is about 15 inches thick. The upper 4 inches is black, mucky fine sand and the lower 11 inches is very dark gray fine sand. The subsurface layer is gray fine sand to a depth of 32 inches. The subsoil is dark gray sandy clay loam to a depth of 44 inches and gray sandy loam to a depth of 80 inches or more. It has lenses and pockets of loamy fine sand and fine sand.	1	June - Feb.	0 - 15 15 - 32 32 - 80	6.0 - 20 6.0 - 20 <0.2	B/D	Severe: Ponding
15	Immokalee fine sand	Nearly level, poorly drained soil on broad low ridges and low knolls in the flatwoods. Slopes are smooth to concave. Typically, the surface layer is very dark gray fine sand about 5 inches thick. The subsurface layer is very dark gray fine sand to a depth of about 44 inches. The subsoil is fine sand to a depth of 80 inches. The upper 4 inches is black, and the lower 32 inches is dark reddish brown. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil.	0 -1.0	June - Nov.	0 - 5 5 - 44 44 - 60 60 - 80	6 - 20 6 - 20 0.6 -2.0 6 - 20	B/D	Severe: Seepage, Wetness, Piping

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
16	Myakka fine sand	Nearly level, poorly drained soil in broad areas of flatwoods. The surface layer is very dark grayish brown fine sand about 6 inches thick. The subsurface layer is light gray fine sand to a depth of 21 inches. The subsoil is fine sand about 25 inches thick. The upper 4 inches is very dark gray, the next 5 inches is dark reddish brown, the next 10 inches is dark brown, and the lower 6 inches is brown. The substratum is pale brown and light brownish gray fine sand to a depth of 80 inches.	0 - 1.0	June - Nov.	0 - 20 20 - 33 33 - 80	6.0 - 20 0.6 - 6.0 6.0 - 20	B/D	Severe: Seepage, Piping, Wetness.
17	Smyrna sand	This is a nearly level, poorly drained soil in the flatwoods. Typically, the surface layer is very dark gray sand about 5 inches thick. The subsurface layer is light gray sand to a depth of 16 inches. The subsoil is organic-coated sand to a depth of 29 inches. The upper part is black, and the lower part is dark reddish brown and dark brown. Below the subsoil there is a light gray sand to depth of 48 inches and dark brown sand to a depth of 80 inches or more.	0 - 1.0	July - Oct.	0 - 16 16 - 24 24 - 80	6.0 - 20 0.6 - 6.0 6.0 - 20	B//D	Severe: Seepage, Piping, Wetness.
18	Cassia fine sand	Nearly level, somewhat poorly drained soil on low ridges slightly higher than the adjacent flatwoods. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is white sand to a depth of 27 inches. The subsoil is sand to a depth of 65 inches. In the upper 7 inches it is dark reddish brown, and the grains are coated with organic material; in the next 23 inches it is brown or pale brown, and in the lower 8 inches it is dark grayish brown and contains black very firm fragments. The substratum to a depth of 80 inches or more is very pale brown and light gray sand.	1.5 - 3.5	July - Jan.	0 - 27 27 - 34 34 - 80	6.0 - 20 0.6 - 6.0 6.0 - 20	C	Severe: Seepage, Piping, Wetness.
19	Ona fine sand	This is a poorly drained, nearly level soil in the flatwoods. The surface layer is black fine sand about 9 inches thick. The subsoil is dark reddish brown loamy fine sand to a depth of 16 inches. The substratum is fine sand to a depth of 80 inches or more. The upper 8 inches is brown, the next 18 inches is pale brown, the next 18 inches is light gray, and the lower 20 inches is brown. Permeability is moderate.	0 - 1.0	June - Nov.	0 - 9 9 - 16 16 - 80	6.0 - 20 0.6 - 2.0 6.0 -20	B/D	Severe: Seeping, Piping, Wetness.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
20	Samsula muck	This is a very poorly drained, nearly level organic soil in low depressions. Typically, the surface layer is black muck about 25 inches thick. Below the muck there is fine sand to a depth of 65 inches or more. In the upper 8' the fine sand is black. In the lower 32 inches it is light gray. Permeability is rapid throughout.	+2 - 1.0	Jan. - Dec.	0 - 25 25 - 80	6.0 - 20 6.0 - 20	B/D	Severe: Excess humus, ponding
21	Placid fine sand depressional	This is a very poorly drained soil in wet depressions and in poorly defined drainageways in the flatwoods. Typically, the surface layer is fine sand about 18 inches thick. It is black in the upper 6 inches and very dark gray in the lower 12 inches. The underlying material is grayish brown or light brownish gray fine sand to a depth of 80 inches or more. Permeability is rapid throughout.	+2 - 1.0	June - Mar.	0 - 18 18 - 80	6.0 - 20 6.0 - 20	B/D	Severe: Seeping, Piping, Ponding.
22	Pomello flne sand	This is a nearly level, moderately well drained soil on low ridges in the flatwoods. Typically, the surface layer is gray fine sand about 5 inches thick. The subsurface layer is fine sand about inches thick. The upper 10 inches is gray, and the 31 inches is white. The subsoil is black fine sand to a depth of 58 inches. Below that, there is gray fine inches thick and black fine sand 14 inches thick.	2.0-3.5	July-Nov.	0 - 46 46 - 58 58 - 80	>20 2.0-6.0 6.0-20	C	Severe: Seepage, Piping.
23	Sparr fine sand	This is a nearly level, somewhat poorly drained soil in seasonally wet, sandy areas on uplands. Slopes are smooth. Typically, the surface layer is dark grayish brown fine sand about 6 inches thick. The subsurface layer is yellowish brown to very pale brown fine sand to a depth of 60 inches. The subsoil to a depth of 80 inches or more is light gray sandy clay loam that has yellow mottles.	1.5-3.5	July-Oct.	0 - 6 6 - 60 60 - 67 67 - 80	6.0-20 6.0-20 0.6-2.0 0.6-2.0	C	Severe: Seepage
24	Jonathan sand	This is a moderately well drained to somewhat excessively drained soil on low ridges in the flatwoods. Typically, the surface layer is very dark gray sand about 6 inches thick. The subsurface layer is gray to white sand and fine sand to a depth of 64 inches. The subsoil is loamy fine sand coated with organic material. The upper 5 inches is dark reddish brown, and the lower 11 inches is black.	3.0-5.0	June-Oct.	0 - 6 6 - 64 64 - 80	6.0-20 6.0-20 <0.2	B	Severe: Seepage, Piping.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
26	Electra sand	This is a nearly level to gently sloping, somewhat poorly drained soil on ridges on uplands. Typically, the surface layer is gray sand about 4 inches thick. The subsurface layer is sand to a depth of about 42 inches. The upper 12 inches is light gray, and the lower 26 inches is white. The subsoil extends to a depth of 80 inches. It is dark reddish brown sand to a depth of 54 inches and is dark brown sand to a depth of 60 inches. Next, it is gray and dark brown sand to a depth of 66 inches, light brownish gray fine sandy loam to a depth of 72 inches, and light gray fine sandy loam to a depth of 80 inches.	2.0-3.5	July-Oct.	0 - 4 4 - 42 42 - 66 66 - 80	6.0-20 6.0-20 0.6-2.0 <0.2	C	Severe: Seepage, Piping.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
27	Bradenton-Felda-Chobee association, frequently flooded	Bradenton-Felda-Chobee association, frequently flooded. This association consists of poorly drained Bradenton and Felda soils and very poorly drained Chobee soils. The soils are in regular and repeating patterns along streams and rivers throughout the county. Most areas are long and narrow and are adjacent to the Peace River. Felda and Bradenton soils are in the higher places, and Chobee soils are in the lower places. The soils are subject to frequent flooding.	Bradenton					
		Bradenton soils have a surface layer of dark gray loamy fine sand about 6 inches thick. The subsurface layer is grayish brown fine sand about 10 inches thick. The subsoil is light brownish gray sandy clay loam about 13 inches thick. The substratum is gray sandy clay loam to a depth of 80 inches. Permeability is moderate.	0-1.0	June-Dec.	0 - 6 6 - 16 16 - 80	6.0-20 6.0-20 0.6-2.0	D	Severe: Seepage, Piping, Wetness.
		Felda soils have a surface layer of black fine sand about 5 inches thick. The subsurface layer is fine sand about 21 inches thick. In the upper 5 inches it is grayish brown, and in the lower 16 inches it is light gray. The subsoil is sandy loam about 22 inches thick. In the upper 10 inches it is gray, and in the lower 12 inches it is grayish brown. The substratum is light gray fine sand to a depth of 80 inches. Permeability is moderate to moderately rapid.	Felda					
			0-1.0	July-Mar.	0 - 8 8 - 55 55 - 80	6.0-20 0.6-6.0 6.0-20	B/D	Severe: Seepage, Piping, Wetness.
		Chobee soils have a surface layer of black fine sandy loam about 8 inches thick. The subsoil is sandy clay loam about 47 inches thick. It is black in the upper 10 inches and very dark gray in the lower 37 inches. The substratum is gray loamy fine sand to a depth of 80 inches. Permeability is slow or very slow.	Chobee					
			0-1.0	June-Feb.	0 - 26 26 - 48 48 - 80	2.0-6.0 <0.2 0.2-6.0	B/D	Severe: Wetness.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
28	Holopaw fine sand	This is a poorly drained, nearly level soil on broad, low-lying flats and in poorly defined drainageways. Slopes are smooth to concave and range from 0 to 2 percent. Typically, the surface layer is black fine sand about 3 inches thick. The subsurface layer is fine sand to a depth of 63 inches. The upper 5 inches is light gray, the middle 16 inches is brown, and the lower 39 inches is light gray. The subsoil is gray sandy loam to a depth of 80 inches.	0-1.0	June-Nov.	0 - 63 63 - 80	6.0-20 0.2-2.0	B/D	Severe: Seepage, Piping, Wetness.
30	Hontoon muck	Hontoon muck. This is a very poorly drained, nearly level soil in swamps and in poorly defined drainageways. Most areas are circular to oblong and range from about 15 to 100 acres in size. Typically, the surface layer is black to dark reddish brown muck to a depth of 60 inches. Below the muck there is dark gray loamy fine sand to a depth of 70 inches and dark gray fine sandy loam to a depth of 80 inches or more. Permeability is rapid.	+2-1.0	Jan.-Dec.	0 - 60 60 - 70	6.0-20 6.0-20	B/D	Severe: Excess humus, Ponding.
31	Pompano fine sand, frequently flooded	This is a poorly drained, deep sandy soil on flood plains and in well defined drainageways throughout the county. Typically, the surface layer is very dark gray fine sand about 4 inches thick. The substratum is light gray fine sand to a depth of 44 inches and is light brownish gray fine sand to a depth of 80 inches or more.	0-1.0	June-Nov.	0 - 4 4 - 80	>20 >20	D	Severe: Seepage, Piping, Wetness.
32	Felda fine sand, depressional	This is a nearly level, poorly drained soil in depressions. Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer is fine sand to a depth of about 26 inches. The upper 5 inches is grayish brown, and the lower 16 inches is light gray. The subsoil is sandy loam about 22 inches thick. The upper 10 inches is gray, and the lower 12 inches is grayish brown. The substratum is light gray fine sand to a depth of 80 inches.	+2-1.0	June-Dec.	0 - 26 26 - 48 48 - 80	6.0-20 0.6-6.0 6.0-20	D	Severe: Seepage, Piping, Ponding.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
33	Manatee mucky fine sand, depressional	This is a very poorly drained, nearly level soil in depressions. Typically, the surface layer is about 14 inches thick. The upper 4 inches is black mucky fine sand, the next 5 inches is black fine sand, and the lower 5 inches is very dark grayish brown fine sand. The subsoil extends to a depth of 44 inches. The upper 16 inches is dark gray sandy loam, and the lower 14 inches is grayish brown sandy loam. The subsoil has lenses and pockets of fine sand. The substratum is light brownish gray sandy loam to a depth of 64 inches and light gray sandy clay loam to a depth of 80 inches. Permeability is moderate.	1	June-Feb.	0 - 14 14 - 80	2.0-6.0 0.6-2.0	B/D	Severe: Ponding.
34	Wachula fine sand	This is a nearly level, poorly drained soil in broad, low areas in the flatwoods. Typically, the surface layer is very dark gray fine sand about 6 inches thick. The subsurface layer is gray or light gray fine sand to a depth of 22 inches. The subsoil extends to a depth of 80 inches. The upper 12 inches is dark reddish brown fine sand, the next 4 inches is yellowish brown fine sand, the next 12 inches is grayish brown sandy clay loam, and the lower 30 inches is greenish gray loamy fine sand.	0-1.0	June-Feb.	0 - 6 6 - 22 22 - 34 34 - 38 38 - 50 50 - 80	6.0-20 6.0-20 0.2-6.0 2.0-6.0 0.06-0.6 0.06-0.6	B/D	Severe: Piping, Wetness.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
35	Farmton fine sand	This is a poorly drained soil nearly level flatwoods. Typically, the surface layer is black fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 34 inches. The upper 6 inches is dark gray; the middle 7 inches is light gray; and the lower 15 inches is white. The subsoil extends to a depth of 80 inches. It is very dark brown fine sand in the upper 11 riches, brown fine sand in the next 10 inches, black fine sand in the next 6 inches, dark gray fine sandy loam in the next 10 inches, and mottled gray, olive, and greenish gray sandy clay loam in the lower 9 inches.	0-1.0	June-Oct.	0 - 6 6 - 34 34 - 61 61 - 80	6.0-20 6.0-20 0.6-2.0 <0.2	B/D	Severe: Seepage, Piping, Wetness.
36	Kaliga muck	This is a very poorly drained, nearly level organic soil in low depressions. Typically, the surface layer is black muck about 25 inches thick. Below the muck there is very dark gray fine sandy loam to a depth of 35 inches, dark gray sandy clay loam to a depth of 60 inches, and very dark gray fine sandy loam to a depth of 80 inches. Permeability is rapid in the surface layer and slow or very slow in the mineral layer between depths of 35 and 60 inches.	+2-1.0	June-Apr.	0 - 25 25 - 35 35 - 60 60 - 80	6.0-20 0.6-6.0 <0.2 2.0-20	B/D	Severe: Thin layer, Ponding.
37	Basinger fine sand, depressional	This is a poorly drained soil in depressions in the flatwoods. Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer is fine sand about 27 inches thick. The upper 5 inches is dark grayish brown, and the lower 22 inches is grayish brown. The subsoil is mixed brown and very dark brown fine sand to a depth of about 55 inches and very dark grayish brown fine sand to a depth of 80 inches or more.	+2-1.0	June-Feb.	0 - 32 32 - 55 55 - 80	>20 >20 >20	B/D	Severe: Seepage, Piping, Ponding.

Table 3.8-1 - Soils Descriptions Found on the Ona Mine Site

MAP No.	SOIL NAME	SOIL DESCRIPTION	SEASONAL HIGH WATER		PERMEABILITY		HYDROLOGIC SOIL GROUP	DEGREE AND KIND OF LIMITATIONS FOR PONDS & EMBANKMENTS
			DEPTH (feet)	DURATION (months)	DEPTH (in)	RATE (in/hr)		
38	St. Lucie fine sand	This is an excessively drained, nearly level soil on ridgetops, knolls, and dunes in areas of sand hills. Typically, the surface layer is dark gray fine sand about 4 inches thick. The underlying material is white fine sand to a depth of 80 inches. .Included with this soil in mapping are small areas of Pomello and Tavares soils. Permeability is very rapid throughout.	>6.0		0 - 80	>20	A	Severe: Seepage, Piping.
39	Bradenton loamy fine sand	This is a poorly drained, nearly level soil on low-lying ridges and hammocks. Typically, the surface layer is very dark gray loamy fine land about 4 inches thick. The subsurface layer is fine sand about 9 inches thick. The upper 4 inches is grayish brown, and the lower 5 inches is light gray. The subsoil is fine sandy loam. The upper 6 inches is grayish brown, and the lower 7 inches is light brownish gray. The substratum is light olive gray, dark gray, or light gray fine sandy loam to a depth of 76 inches and greenish gray loamy fine sand to a depth of 80 inches. Permeability is moderate.	0-1.0	June-Dec.	0 - 4 4 - 13 13 - 27 27 - 80	6.0-20 6.0-20 0.6-2.0 0.6-6.0	B/D	Severe: Seepage, Piping, Wetness.

Source: IMC, 2002; SCS 1984.

Table 3.8-2 - Sinkhole Potential

Sinkhole Potential	Annual Frequency (Sinkholes/mi^2/yr)
Extremely High	>1.0
High	0.1 to 1.0
Moderate	0.01 to 0.1
Low	0.001 to 0.01
Extremely Low	<0.001

Source: IMC, 2002.

Table 3.8-3 - Typical Concentrations of Radium-226 in Phosphate Ore, Rock, and Waste.

Material	Radium-226 Concentrations (pCi/g)
Matrix	25
Rock (product)	40
Sand Tailings	5
Clay	40
Typical Soils	1

Source: IMC, 2002.

Table 3.8-4 - Soil Radium-226 Concentrations at the Ona Mine Site

Feet below Ground	Sample										Avg	Std. Dev.
	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10		
1	0.16	0.19	0.13	0.14	0.25	0.17	0.13	0.15	0.13	0.17	0.16	0.04
2	0.29	0.07	0.14	0.13	0.39	0.16	0.17	0.17	0.23	0.18	0.19	0.09
3	0.3	0.29	0.11	0.37	1.59	0.16	0.29	0.21	0.23	0.13	0.37	0.44
4	0.44	0.4	0.11	0.58	4.6	0.1	0.24	0.52	0.26	0.27	0.75	1.36
5	0.75	0.66	0.13	7.66	5	0.34	0.17	1.51	0.29	0.34	1.69	2.56
6	1.11	0.64	0.14	10.4	5.75	1.01	0.18	1.48	0.45	1.24	2.24	3.29

Source: ECT, 2000.
All values are for soil Radium-226 concentrations in pCi/g

Table 3.8-5 - Results Collected at the IMC Site and Typical Radioactivity Levels from the BRC

Parameter	Pre-mining Level	Typical Background	Reference Cruiterion
Gamma radiation (uR/hr)	5	6	20
Radon Flux (pCi/m^{2}s)	0.77 avg.	0.1	None
Radium-226 in soil (pCi/g)	0.9 avg.	0.5	40
Outdoor radon (pCi/l)	--	0.2	4

Sources: IMC, 2002.

DRAFT

Table 3.10-1 National and State AAQS, Allowable PSD Increments, and Significant Impact Levels

Pollutant	Averaging Time	AAQS (µg/m^3)			PSD Increments (µg/m^3)		Significant Impact Levels (µg/m^3) [b]
		Primary Standard	Secondary Standard	Florida	Class I	Class II	
Particulate Matter [c] (PM_{10})	Annual Arithmetic Mean	50	50	50	4	17	1
	24-Hour Maximum	150	150	150	8	30	5
Sulfur Dioxide	Annual Arithmetic Mean	80	NA	60	2	20	1
	24-Hour Maximum [a]	365	NA	260	5	91	5
	3-Hour Maximum [a]	NA	1,300	1,300	25	512	25
Carbon Monoxide	8-Hour Maximum [a]	10,000	10,000	10,000	NA	NA	500
	1-Hour Maximum [a]	40,000	40,000	40,000	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	100	100	100	2.5	25	1
Ozone [c]	8-Hour Maximum [d]	157	157	157	NA	NA	NA
Lead	Calendar Quarter Arithmetic Mean	1.5	1.5	1.5	NA	NA	NA

Note: Particulate matter (PM_{10}) = particulate matter with aerodynamic diameter less than or equal to 10 micrometers.
NA = Not applicable, i.e., no standard exists.
[a] Short-term maximum concentrations are not to be exceeded more than once per year.
[b] Maximum concentrations are not to be exceeded.
[c] On July 18, 1997, EPA promulgated revised AAQS for particulate matter and ozone. For particulate matter, $PM_{2.5}$ standards were introduced with a 24-hour standard of 65 g/m^3 (3-year average of 98th percentile) and an annual standard of 15 g/m^3 (3-year average at community monitors). These standards have been stayed by a court case against EPA; implementation of these standards appears to be years away.
[d] 0.08 parts per million (ppm); achieved when 3-year average of 99th percentile is 0.08 ppm or less. These have been stayed by a court case against EPA. EPA is appealing. The 1-hour standard of 0.12 ppm is still applicable. FDEP has not yet adopted the new standards.

Sources: CFR, 2000b; F.A.C., 2002.

Table 3.10-2 Monthly Temperatures, Wauchula and Tampa International Airport

Month	Wauchula Mean 1961-1990 (°F)	Tampa Mean 1961-1990 (°F)	Tampa Max. Extreme 1947-1997 (°F)	Tampa Min. Extreme 1947-1997 (°F)
January	61.7	59.9	86 (1991)	21 (1985)
February	63.0	61.5	88 (1971)	24 (1958)
March	67.7	66.4	91 (1949)	29 (1980)
April	71.6	71.2	93 (1975)	40 (1987)
May	77.0	77.2	98 (1975)	49 (1992)
June	80.6	81.0	99 (1985)	53 (1984)
July	81.8	82.1	97 (1995)	63 (1970)
August	82.1	82.1	98 (1975)	67 (1973)
September	80.6	81.0	96 (1991)	57 (1981)
October	75.1	74.9	94 (1990)	40 (1964)
November	68.4	67.6	90 (1971)	23 (1970)
December	63.2	62.2	86 (1994)	18 (1962)
Annual	72.8	72.3	99 (1985)	18 (1962)

[a] Based on 60 years of data, 1940-1999.
Source: Climatological Data Annual Summary, Florida 1999

DRAFT

Table 3.10-3 Wind Direction and Wind Speed Measured at Tampa International Airport[a]

Season	Average Wind Speed (mph)	Calm (%)	Prevailing Wind Direction (%)	Prevailing Wind Average Wind Speed (mph)
Winter	7.8	6.4	Northeast (12.0)	7.8
Spring	8.3	6.1	East (10.6)	8.1
Summer	6.1	14.2	West (10.8)	9.1
Fall	6.8	10.6	East-northeast (15.4)	7.0
Annual	7.2	9.3	East-northeast (10.5)	6.9

[a] 5-year period of record, 1991 to 1995.

Source: NOAA, 1996

Table 3.10-4 Wind Direction and Wind Speed Measured at Orlando International Airport[a]

Season	Average Wind Speed (mph)	Calm (%)	Prevailing Wind Direction (%)	Prevailing Wind Average Wind Speed (mph)
Winter	9.2	2.7	North (15.6)	9.0
Spring	9.5	1.7	East (12.3)	10.2
Summer	7.8	3.4	South (14.3)	8.3
Fall	8.3	3.4	North (15.2)	8.7
Annual	8.7	2.8	North (10.5)	8.7

[a] 5-year period of record, 1991 to 1995.

Source: NOAA, 1996.

DRAFT

Table 3.10-5 Occurrences of Atmospheric Stability Classes Determined at Tampa International Airport[a]

	Occurrence (%) of Stability Class					
Season	Very Unstable	Moderately Unstable	Slightly Unstable	Neutral	Slightly Stable	Moderately Stable
Winter	0.0	3.6	12.5	43.4	17.8	22.7
Spring	0.6	9.9	17.6	32.1	17.2	22.5
Summer	3.4	16.8	17.8	17.9	15.6	28.6
Fall	0.7	9.4	15.1	29.5	16.2	29.2
Annual	1.2	9.9	15.7	30.7	16.7	25.8

[a] 5-year period of record, 1991 to 1995.

Source: NOAA, 1996.

Table 3.10-6 Occurrences of Atmospheric Stability Classes Determined at Orlando International Airport[a]

	Occurrence (%) of Stability Class					
Season	Very Unstable	Moderately Unstable	Slightly Unstable	Neutral	Slightly Stable	Moderately Stable
Winter	0.0	2.4	9.0	55.1	18.8	14.7
Spring	1.0	7.0	13.9	46.0	17.7	14.4
Summer	2.8	11.5	16.3	32.8	18.2	18.5
Fall	0.7	5.6	12.4	42.3	19.8	19.3
Annual	1.1	6.6	12.9	44.0	18.6	16.7

[a] 5-year period of record, 1991 to 1995.

Source: NOAA, 1996.

Table 3.12-1 - General Population Characteristics

General Population Characteristics				
	State of Florida	Hardee County	Zolfo Springs	Wauchula
1990 Census	12,937,926	19,499	1,219	3,253
2000 Census	15,982,378	26,938	1,641	4,363

SOURCE: US Census 2001a, US Census 2001b.

Table 3.12-2 - Existing Conditions Analysis

ROADWAY	SEGMENT	COUNT YEAR	AADT	SOURCE	"K" FACTOR	"D" FACTOR	Design Hour Peak Directional Volume	No. of Miles	No. of Lanes	No. of Signals	Adopted Level of Service	Adopted Service Volume	LOS
SR 37	CR 630 to CR 640	99	4800	FDOT	9.61	51.82	239	7.59	2	1	C	930	A
SR 62	SR 37 to Hardee Co. Line	99	3000	FDOT	10.38	55.27	172	4.02	2	0	C	930	A
	Hardee Co. Line to US 17	99	3300	FDOT	10.81	55.23	197	14.25	2	0	C	930	A
SR 64	CR 675 to Hardee Co. Line	99	4400	FDOT	10.38	55.27	252	15.54	2	0	C	930	A
	Hardee Co. Line to CR 665	99	2700	FDOT	10.81	55.23	161	1.92	2	0	C	930	A
	CR 665 to CR 663	99	3600	FDOT	10.81	55.23	215	6.90	2	0	C	930	A
	CR 663 to US 17	99	5200	FDOT	10.81	55.23	310	7.78	2	1	C	930	A
US 17	North of SR 64	99	12200	FDOT	10.81	55.23	728	10.40	2	6	C	770	C
	South of SR 64	99	11800	FDOT	10.81	55.23	705	11.14	2	0	C	930	B
Duette Road	SR 64 to SR 62	98	944	MANATEE	9.30	56.8	50	8.75	2	0	C	420	C
CR 630	CR 663 to SR 37	99	3887	POLK CO.	9.30	56.8	205	0.80	2	0	C	420	C
CR 661	North end at SR 64	99	753	HARDEE CO.	9.30	56.8	40	4.40	2	0	C	420	C
CR 663	North end at SR 64	99	703	HARDEE CO.	9.30	56.8	37	10.20	2	0	C	420	C
	SR 64 to SR 62 (Dirt Road)	N/A	N/A	N/A	N/A	N/A	N/A	8.00	2	0	C	420	C
	SR 62 to Hardee Co. Line	99	1153	POLK CO.	9.30	56.8	61	3.60	2	0	C	420	C
	Polk Co. Line to CR 630	99	1339	POLK CO.	9.30	56.8	71	7.40	2	0	C	420	C
CR 665	North end at SR 64	99	571	HARDEE CO.	9.30	56.8	30	11.60	2	0	C	420	C

Note: The K and D factors for the state roads were obtained from FDOT. The K and D factors for the county roads were based on the FDOT 1998 Level of Service Manual.
t:ona/cda/traffic_tab1.xls

ADDT - Average Annual Daily Traffic
Level of Service (LOS): Based on average through-vehicle travel speed for the street segment.
Free-flow Speed (FFS): Average speed of traffic stream when other vehicles and other intersection traffic control factors do not have an influence on drivers' speed choice.
LOS A - Free flow operations at average travel speeds (90% of FFS for street class)
LOS B - Reasonable unimpeded operations at average travel speeds (70% of FFS for street class)
LOS C - Stable operations, maneuvering may be more restricted than Level B (50% of FFS for street class)
LOS D - Small increases in flow may cause substantial increases in delay and decreases in travel speed (40% of FFS for street class)
LOS E - Significant delays (33% or less of FFS for street class)
LOS F - Extremely low speeds, high delays, high volumes, and extensive queuing (33% or less of FFS for street class)

Sources: IMC, 2002; TRB, 2000.

Table 3.12-3 - Annual Transportation Growth Rates

Site No.	Location	Annual Growth Rate (%)
79	SR 37 between CR 630 and CR 640	3.79%
146	SR 64 one mile west of CR 675, Manatee Co.	10.61%
3	US 17 south of Peace River Bridge, Hardee Co	3.39%
11	SR 64 east of CR 663, Hardee Co.	6.16%
12	SR 64 west of CR 665, Hardee Co.	4.95%
21	SR 64 west of Oak Street, Hardee Co	0.72%
5007	US 17 north of SR 66, Hardee Co.	0.95%
5009	SR 64 west of US 17, Hardee Co.	3.88%.
n/a	Ft. Green Road (CR 663) south of CR 630	10.89%
n/a	Line	20.56%
n/a	CR 630 between CR 663 and SR 37	4.41%

Source: IMC, 2002.

Table 3.12-4 - Transportation Growth Rates Using FSUTMS Data

ROADWAY	SEGMENT	COUNT YEAR	EXISTING AADT	2020 PSWADT	2020 AADT*	ANNUAL GROWTH
SR 37	CR 630 to CR 640	1999	4800	12930	11766	6.91%
SR 62	SR 37 to Hardee County Line	1999	3000	5947	5233	3.55%
	Hardee Co. Line to US 17	1999	3300	6451	5677	3.43%
SR 64	CR 675 to Hardee Co. Line	1999	4400	4162	3663	0.00%
	Hardee Co. Line to CR 665	1999	2700	4806	4229	2.70%
	CR 665 to CR 663	1999	3600	6780	5966	3.13%
	CR 663 to US 17	1999	5200	8440	7427	2.04%
US 17	North of SR 64	1999	12200	34441	30308	7.07%
	South of SR 64	1999	11800	30340	26699	6.01%
Duette Road	SR 64 to SR 62	1998	944	676	595	0.00%
CR 630	CR 663 to SR 37	1999	3887	1718	1512	0.00%
CR 661	North end at SR 64	1999	753	1596	1404	4.12%
CR 663	North end at SR 64	1999	703	5751	5061	29.52%
	SR 64 to SR 62 (Dirt Road)	N/A	N/A	5343	4702	N/A
	SR 62 to Hardee Co. Line	1999	1153	5625	4950	15.68%
	Polk Co. Line to CR 630	1999	1339	4346	3824	8.84%
CR 665	North end at SR 64	1999	571	108	95	0.00%

Note:

* The 2020 Annual AverageDaily Traffic (ADDT) numbers obtained by applying the Model Output Conversion Factor (MOCF) of 0.88 for all roadways except SR 37 (MOCF = 0.91) to the Peak Season Weekday Average Daiy Traffic (PSWADT) volumes.

Source: IMC, 2002.

Table 3.12-5 - Tax Base and Revenue for Hardee County and Florida

96-97 Revenue Sources	Hardee County	County Percentage	State of Florida	State Percentage
Total	$17,167,000	100%	$21,912,409,000	100%
Taxes/Impact Fees	$6,742,000	39%	$6,635,148,000	30%
Federal Grants	$132,000	1%	$656,600,000	3%
State/Other Governments	$3,827,000	22%	$1,795,524,000	8%
Charges for Services	$1,115,000	7%	$6,268,576,000	29%
Fines/Forfeits	$365,000	2%	$149,625,000	1%
Other Sources/Transfers	$4,985,000	29%	$6,406,936,000	29%

Source: IMC, 2002.

Table 3.12.6 - Ad Valorem Tax Property Appraisal of the IMC Ona Tract

Hardee County Folio No.	DRI Parcel Description	Acres	1999 Valuation ($)	$/Acre
10020	31/34/23	193.13	22,828	$118.20
10020	29/34/23	523.00	36,217	$69.25
10010	11/34/23	159.84	10,085	$63.09
10020	30/34/23	237.40	25,798	$108.67
10010	12/34/23	159.20	5,696	$35.78
10010	04/34/23	661.00	65,490	$99.08
10020	09/34/23	600.34	55,130	$91.83
10020	16/34/23	539.00	235,819	$437.51
10010	09/34/23	39.58	63,622	$1,607.43
10010	10/34/23	159.52	10,995	$68.93
1000	08/34/23	240.00	24,900	$103.75
10010	17/34/23	638.00	40,265	$63.11
10040	19/34/23	160.00	23,200	$145.00
10030	19/34/23	40.00	5,360	$134.00
10050	20/34/23	269.00	39,005	$145.00
10030	20/34/23	167.50	22,240	$132.78
10020	20/34/23	202.50	27,367	$135.15
5010	16/34/23	1.80	4,706	$2,614.44
10020	15/34/23	619.00	421,669	$681.21
4770	15/34/23	19.33	35,040	$1,812.73
1210	22/34/23	637.60	51,051	$80.07
10010	14/34/23	640.00	48,663	$76.04
10010	13/34/23	319.00	9,970	$31.25
10010	13/34/23	319.00	32,758	$102.69
2500	23/34/23	640.00	54,660	$85.41
10010	24/34/23	640.00	53,125	$83.01
7410	26/34/23	641.00	63,620	$99.25
10010	36/34/23	641.00	56,705	$88.46
7500	28/34/23	419.00	46,955	$112.06
10010	27/34/23	638.00	85,038	$133.29
10010	25/34/23	641.00	55,220	$86.15
100	18/34/24	650.00	84,752	$130.39
2420	17/34/24	541.13	22,582	$41.73
6700	17/34/24	19.27	1,637	$84.95
10010	19/34/24	639.50	57,422	$89.79
10020	20/34/24	637.75	49,262	$77.24
5000	20/34/24	1.34	113	$84.33
9020	16/34/24	320.00	30,550	$95.47

Sources: IMC, 2002; Hardee County, 2001d.

Table 3.12.6 - Ad Valorem Tax Property Appraisal of the IMC Ona Tract

Hardee County Folio No.	DRI Parcel Description	Acres	1999 Valuation ($)	$/Acre
2520	15/34/24	230.00	34,185	$148.63
6000	21/34/24	604.20	48,817	$80.80
1810	21/34/24	29.00	1,445	$49.83
10020	22/34/24	640.00	89,578	$139.97
3750	14/34/24	135.00	19,575	$145.00
8120	23/34/24	340.00	46,900	$137.94
1250	26/34/24	160.00	18,899	$118.12
7000	27/34/24	20.00	1,700	$85.00
1680	27/34/24	250.00	30,960	$123.84
1070	28/34/24	531.00	38,040	$71.64
1080	28/34/24	109.00	7,065	$64.82
5330	33/34/24	0.52	26,951	$52,230.62
7500	33/34/24	237.00	29,845	$125.93
5620	33/34/24	1.72	45,283	$26,327.33
5650	33/34/24	0.29	15,523	$53,527.59
4030	33/34/24	29.00	3,170	$109.31
4020	33/34/24	1.00	200	$200.00
7520	33/34/24	129.00	12,840	$99.53
7530	33/34/24	20.75	3,008	$144.96
5320	33/34/24	39.00	3,315	$85.00
10020	30/34/24	640.00	40,130	$62.70
10010	20/34/24	520.00	22,695	$43.64
10020	29/34/24	120.00	3,600	$30.00
10010	31/34/24	664.00	35,330	$53.21
2430	32/34/24	514.00	59,650	$116.05
2420	32/34/24	126.00	9,885	$78.45
8110	18/34/23	80.00	11,600	$145.00
Total All Parcels		20,784.21	2,639,704	$127.01

Note: The difference in total acres within the mine boundary is due to acres assumed to be in each section of land (i.e., 640) versus actual IMC-Agrico survey results.

Sources: IMC, 2002; Hardee County, 2001d.

TABLE 3.12-7 - ONA MINE PROJECT - ENVIRONMENTAL JUSTICE SURVEY CENSUS DATA

UNIT	POPULATION	MINORITY %	INCOME		RACE					
			Family	Household	White	Black	Amer/Indian	Asian	Hispanic	Other
State of Florida										
1990 Census	12,937,926	29.1%	$32,212.00	$ 27,483.00	9,488,696 73.3%	1,703,544 13.2%	39,773 0.3%	143,793 1.1%	1,555,031 12.0%	7,089 0.1%
Hardee County										
1990 Census	19,499	28.8%	$24,327.00	$22,065.00	13,870 71.1%	1,014 5.2%	69 0.4%	27 0.1%	4,483 23.0%	36 0.18%
Focus Area										
CTBG 9703, #5 (3% of total)	21	14.3%	$28,750.00	$25,625.00	18 85.7%	0 0.0%	0 0.0%	0 0.0%	3 14.3%	0 0.0%
CTBG 9704, #5 (1% of total)	11	18.2%	$23,594.00	$24,076.00	9 81.8%	0 0.0%	0 0.0%	0 0.0%	2 18.2%	0 0.0%
Census Tracts										
Track 9703	4,802	30.3%	$25,055.00	$22,683.00	3,349 69.7%	0 0.0%	22 0.5%	0 0.0%	1431 29.8%	0 0.0%
Block Group 5	700	12.0%	$28,750.00	$25,625.00	606 86.6%	0 0.0%	7 1.0%	0 0.0%	87 12.4%	0 0.0%
Track 9704	4,944	32.6%	$22,939.00	$20,922.00	3,330 67.4%	630 12.7%	7 0.1%	25 0.5%	934 18.9%	18 0.4%
Block Group 5	1,098	21.4%	$23,594.00	$24,076.00	863 78.6%	50 4.6%	0 0.0%	20 1.8%	165 15.0%	0 0.0%

Note: 2000 US Census data was not included due to limited availability of data.
Source: 1990 US Census

Table 4.2-1 - Ona Mine Wide Land Use/Cover Analysis

(FLUCFCS No. Code) Type of Vegetative Cover	Acres Present Onsite Today (Premining)	Acres Proposed to be Left Undisturbed	Acres Proposed to be Disturbed	Proposed Reclamation	Acres Upon Completion of Reclamation
(100) Urban Land Uses					
(111) Single family homes	5.3	1.4	3.9	0.0	1.4
(112) Mobile homes	0.6	0.0	0.6	0.0	0.0
Subtotal	**5.8**	**1.4**	**4.5**	**0.0**	**1.4**
(200) Agricultural Uses					
(211) Improved pasture	7,306.3	305.8	7000.4	4955.9	5,261.7
(212) Unimproved pasture	145.7	1.2	144.5	0.0	1.2
(213) Woodland pasture	637.4	269.1	368.2	1163.2	1,432.3
(215) Field crops	119.3	25.9	93.4	0.0	25.9
(221) Citrus groves	209.2	0.0	209.2	0.0	0.0
Subtotal	**8,417.9**	**602.1**	**7815.8**	**6119.1**	6,721.2
(300) Rangeland					
(310) Herbaceous	19.8	1.1	18.7	0.0	1.1
(320) Shrub and Brushland	0.5	0.0	0.5	673.2	673.2
(321) Palmetto prairies	2,898.0	491.3	2406.7	1797.2	2,288.5
(329) Other shrub and brush	105.4	29.8	75.6	0.0	29.8
(330) Mixed	30.2	1.4	28.9	0.0	1.4
Subtotal	**3,053.9**	**523.6**	**2530.3**	**2470.3**	2,993.9
(400) Upland Forests					
(410) Upland Coniferous Forests				1243.0	1,243.0
(411) Pine flatwoods	1,479.6	536.4	943.1	493.1	1,029.5
(413) Sand pine	23.7	0.0	23.7	114.5	114.5
(414) Pine-mesic oaks	5.7	1.3	4.4	0.0	1.3
(425) Temperate hardwoods	756.5	559.7	196.8	94.1	653.8
(427) Live oak	1,242.2	666.5	575.7	101.3	767.7
(432) Sand live oak	404.2	77.2	327.0	271.7	348.9
(434) Hardwood-conifer mixed	1,058.0	377.1	681.0	616.1	993.1
(438) Mixed hardwoods	28.8	13.9	14.8	5.2	19.2
Subtotal	**4,998.7**	**2,232.1**	**2766.6**	**2939.0**	**5,171.1**
(500) Water					
Streams & Waterways	0.0	0.0	0.0	0.1 *	0.1
Natural streams (511)	20.9	13.3	7.6	0.5 *	13.8
Man-made ditches (512)	74.6	15.4	59.2	0.6	16.1
(510) Streams, Waterways, and Ditches - Total	95.5	28.7	66.8 *	1.3 *	30.0
(522) Lakes 100 -500 ac.	0.0	0.0	0.0	565.4	565.4
(523) Lakes 10 - 100 ac.	0.0	0.0	0.0	453.9	453.9
(534) Reservoirs < 10 ac. (cattle ponds)	20.2	2.0	18.3	14.0	16.0
Subtotal	**115.7**	**30.7**	**85.0**	**1,034.5**	**1,065.2**
(600) Wetlands					
(611) Bay swamps	126.4	27.0	99.5	127.1	154.1
(613) Gum swamps	25.8	1.1	24.7	32.3	33.4
(615) Stream swamps	64.8	33.4	31.4	40.9	74.3
(616) Inland ponds and sloughs	2.9	0.0	2.9	0.0 #	0.0
(617) Mixed wetland hardwoods	1,048.5	580.6	467.9	704.6 *	1,285.2
(620) Wetland coniferous	31.6	1.9	29.6	107.5 #	109.4
(630) Wetland mixed hardwood-coniferous	137.1	55.7	81.4	260.0	315.7
Forested Sub total	1,434.1	699.7	734.4	1272.4	1,972.1
Freshwater marshes (640 & 641)	1,413.0	480.2	932.8	1043.9	1,524.1
Shrub swamps (646)	767.2	193.0	574.2	542.3	735.3
(641) Freshwater marshes (includes 646) - total	2,180.1	673.2	1,507.0	1,586.3	2,259.4
(643) Wet prairies	419.8	75.9	343.9	406.6	482.5
(644) Emergent aquatics	1.2	0.0	1.2	2.8	2.8
Marsh Sub total	2,601.2	749.1	1,852.1	1,995.7	2,744.7
Subtotal - Wetlands (600's)	**4,035.3**	**1,448.7**	**2586.5**	**3268.1**	**4,716.8**
(700) Barren Lands					
(743) Spoil areas	13.3	0.4	12.9	0.0	0.4
Subtotal	**13.3**	**0.4**	**12.9**	**0.0**	**0.4**
(800) Transportation Uses					
(814) Roads	35.0	0.6	34.4	5.1	5.7
Subtotal	**35.0**	**0.6**	**34.4**	**5.1**	**5.7**
Total: Ona Minesite	**20,675.5**	**4,839.5**	**15836.1**	**15836.1**	**20,675.6**

* Reclaimed 510, 512 are stream/ditch connections in access corridor crossings. Note that streams are included in 615 & 617.

\# Reclaimed 620 includes 616

Source: IMC, 2002.

Table 4.2-2 Wetland Impacts Summary USACE Jurisdictional Areas

(FLUCFCS No. Code) Type of Vegetative Cover	Current Total Jurisdiction	Acres Proposed to be Left Undisturbed	Acres to be Mined or Disturbed (2)	Proposed Reclamation (3)	Projected Total Post Reclamation Jurisdiction
OTHER					
(111) Single family homes (1)	0.4	0.4	0.0	0.0	0.4
(743) Spoil areas	0.1	0.0	0.1	0.0	0.0
(814) Roads	0.0	0.0	0.0	0.0	0.0
Total Other (1)	**0.5**	**0.4**	**0.1**	**0.0**	**0.4**
OPEN WATER					
(500) Water					
(510) Streams & Waterways	0.0	0.0	0.0	0.1 (7)	0.1
(512) Man-made ditches	46.0	13.1	32.9	0.6	13.7
(522) Lakes 100 -500 ac.	0.0	0.0	0.0	565.4 (8)	565.4
(523) Lakes 10 - 100 ac.	0.0	0.0	0.0	453.9 (8)	453.9
(534) Reservoirs < 10 ac. (cattle ponds)	13.0	1.8	11.2	14.0 (8)	15.8
Total Open Water	**59.1**	**14.9**	**44.1**	**1034.0**	**1,049.0**
HERBACEOUS					
(211) Improved pasture	62.6	15.5	47.2	0.0 (4)	15.5
(212) Unimproved pasture	0.9	0.0	0.9	0.0 (4)	0.0
(215) Field crops	0.0	0.0	0.0	0.0	0.0
(310) Herbaceous	5.3	0.7	4.6	0.0 (4)	0.7
(321) Palmetto prairies	9.2	3.3	5.9	0.0 (4)	3.3
(329) Other shrub and brush	18.9	13.0	5.9	0.0 (4)	13.0
(330) Mixed	9.9	1.1	8.8	0.0 (4)	1.1
640 Vegetated Non-Forests					
(641) Freshwater marshes	1,159.6	426.0	733.6	1043.9	1,469.9
(643) Wet prairies	340.0	66.1	273.9	406.6	472.8
(644) Emergent aquatics	1.2	0.0	1.2	2.8	2.8
(646) Shrub swamps	696.5	182.9	513.6	158.5 (9)	341.4
Total Herbaceous	**2,304.1**	**708.5**	**1,595.6**	**1611.8 (9)**	**2,320.4**
FORESTED					
(213) Woodland pasture	90.5	73.9	16.6	0.0 (5)	73.9
(411) Pine flatwoods	96.8	27.7	69.1	0.0 (6)	27.7
(414) Pine-mesic oaks	0.0	0.0	0.0	0.0	0.0
(425) Temperate hardwoods	416.4	351.2	65.2	0.0 (5)	351.2
(427) Live oak	239.8	138.7	101.1	0.0 (5)	138.7
(434) Hardwood-conifer mixed	281.6	110.4	171.1	0.0 (5)	110.4
(438) Mixed hardwoods	1.5	0.7	0.8	0.0 (5)	0.7
(511) Natural streams	20.2	13.1	7.0	0.5	13.6
(611) Bay swamps	96.2	27.0	69.2	110.8	137.8
(613) Gum swamps	25.6	1.1	24.5	32.3	33.4
(615) Stream swamps	64.8	33.4	31.4	40.8	74.2
(616) Inland ponds and sloughs	2.9	0.0	2.9	0.0	0.0
(617) Mixed wetland hardwoods	1,035.5	577.7	457.8	703.7	1,281.3
(620) Wetland coniferous	28.7	1.9	26.7	105.3	107.3
(630) Wetland mixed hardwood-coniferous	137.1	55.7	81.4	259.2	314.9
Total Forested	**2,537.3**	**1,412.5**	**1,124.8**	**1252.7**	**2,665.2**
Site Total	**4,901.0**	**2,136.4**	**2,764.7**	**3898.5 (9)**	**6,034.9**

Notes:

1. Includes 0.36 acre homesite that was claimed.
2. Based on IMC Mine plan in March 2001 ERP application revision
3. Based on IMC Reclamation Plan in March 2001 ERP application revision.
4. Mitigated as 643 - Wet Prairie.
5. Mitigated as 617 - Mixed Hardwood Wetland Forests.
6. Mitigated as 620 - Wetland coniferous Forest.
7. Stream mitigation not only comprised of FLUCFCS 510, but also of FLUCFCS 615/617.
8. Number represents the total acres of open water (FLUCFCS 520) proposed onsite to be reclaimed. Please refer to Table A-40 for a tabulation of all reclaimed wetlands.
9. Includes 31.7 acres of offsite mitigation at the FG-3 reclamation program area.

Source: IMC, 2002.

USACE Wetland Acres

Mining Activity	Year *	Wetlands Disturbed in Each Year	Net Existing Wetlands	Wetlands Reclaimed in each Year	Total Wetlands Reclaimed	Active Clay Settling Areas	Total wetlands	Clay Settling Area - Active Pond								
								O-1A	O-1B	O-1C	O-2	O-3A	O-3B	O-4A	O-4B	O-4C
Pre-Mining			4,901													
Mining	2003	34.7	4,866	13	13		4,879									
Mining	2004	6.0	4,860		13	373	5,246	373								
Mining	2005	85.9	4,775		13	746	5,533	373	373							
Mining	2006	141.0	4,633		13	746	5,392	373	373							
Mining & Recl.	2007	77.5	4,556	1	14	746	5,316	373	373							
Mining & Recl.	2008	108.9	4,447	14	27	746	5,220	373	373							
Mining & Recl.	2009	43.3	4,404	17	45	1,192	5,641	373	373	446						
Mining & Recl.	2010	308.4	4,095	31	76	1,192	5,364	373	373	446						
Mining & Recl.	2011	271.8	3,824	54	131	1,434	5,388		373	446	615					
Mining & Recl.	2012	195.3	3,628	130	261	1,061	4,950			446	615					
Mining & Recl.	2013	135.2	3,493	383	644	1,756	5,893			446	615	695				
Mining & Recl.	2014	97.3	3,396	7	651	1,756	5,803			446	615	695				
Mining & Recl.	2015	110.8	3,285	76	726	1,756	5,767			446	615	695				
Mining & Recl.	2016	162.9	3,122	25	751	2,402	6,276			446	615	695	646			
Mining & Recl.	2017	197.6	2,924	48	799	1,956	5,680				615	695	646			
Mining & Recl.	2018	62.2	2,862	98	897	1,956	5,715				615	695	646			
Mining & Recl.	2019	111.6	2,751	305	1,201	1,988	5,940					695	646	647		
Mining & Recl.	2020	208.0	2,543	78	1,280	2,509	6,332					695	646	647	521	
Mining & Recl.	2021	174.1	2,369	277	1,557	1,814	5,739						646	647	521	
Mining & Recl.	2022	133.5	2,235	74	1,631	2,319	6,185						646	647	521	505
Mining & Recl.	2023	71.4	2,164	189	1,820	2,319	6,303						646	647	521	505
Mining & Recl.	2024	27.4	2,136	392	2,212	1,673	6,022							647	521	505
Mining & Recl.	2025		2,136	127	2,340	1,673	6,149							647	521	505
Mining & Recl.	2026		2,136	150	2,490	1,673	6,299							647	521	505
Reclamation	2027		2,136	430	2,920	-	5,056									
Reclamation	2028		2,136	497	3,417	-	5,553									
Reclamation	2029		2,136	362	3,779	-	5,915									
Reclamation	2030		2,136	7	3,786	-	5,923									
Reclamation	2031		2,136	112	3,898	-	6,034									
Reclamation	2032		2,136		3,898	-	6,034									
						-										
	Total	2,765	2,136	3,898.1			6,034									

Source: IMC, 2002.

Table 4.2-4 - Acreages of Jurisdictional Areas

FLUCS Code	WRAP Score									Sum of Acres
	<0.20	0.20 - 0.29	0.30 - 0.39	0.40 - 0.49	0.50 - 0.59	0.60 - 0.69	0.70 - 0.79	0.80 - 0.89	0.90 - 0.99	
111	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4
211	0.0	9.7	30.0	21.9	1.0	0.0	0.2	0.0	0.0	62.6
212	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
213	0.0	0.0	2.5	74.9	5.9	7.2	0.0	0.0	0.0	90.5
310	0.0	0.0	0.0	0.0	0.7	0.0	4.6	0.0	0.0	5.3
321	0.0	0.0	0.0	0.0	3.6	3.4	0.0	2.3	0.0	9.2
329	0.0	0.0	0.0	0.0	8.2	5.7	1.6	3.3	0.0	18.9
330	0.0	0.0	0.0	0.0	8.0	0.7	1.3	0.0	0.0	9.9
411	0.0	0.0	0.0	0.0	12.3	39.4	20.0	25.1	0.0	96.8
425	0.0	0.2	0.0	5.3	21.1	121.2	256.5	12.0	0.0	416.4
427	0.0	8.9	0.0	24.4	85.7	76.5	20.5	14.5	9.4	239.8
434	0.0	1.6	8.4	37.9	37.8	142.6	48.7	4.6	0.0	281.6
438	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.5
511	0.0	0.1	0.9	1.4	4.0	8.7	3.8	1.3	0.0	20.2
512	1.5	0.7	4.3	8.1	12.3	14.6	4.6	0.1	0.0	46.0
534	0.2	0.1	3.9	3.0	4.2	1.2	0.1	0.2	0.0	13.0
611	0.0	0.0	0.0	0.0	16.4	38.0	17.6	13.0	11.2	96.2
613	0.0	0.0	0.0	0.0	1.4	0.0	22.9	1.3	0.0	25.6
615	0.0	0.0	4.2	5.2	0.0	27.6	27.8	0.0	0.0	64.8
616	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	2.9
617	0.0	0.0	10.1	24.8	45.0	152.2	381.6	368.2	53.6	1,035.5
620	0.0	0.0	0.0	0.6	0.0	11.0	16.1	0.9	0.0	28.7
630	0.0	0.0	0.0	5.7	11.9	41.1	71.5	6.8	0.0	137.1
641	0.0	0.7	2.8	44.9	118.5	273.2	332.3	298.6	88.5	1,159.6
643	2.0	0.7	6.9	53.6	97.8	97.0	62.4	15.1	4.6	340.0
644	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	1.2
646	0.0	6.9	32.9	108.7	238.8	140.8	126.0	42.4	0.0	696.5
743	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Subtotal:	4.6	29.6	106.8	423.7	735.9	1,202.1	1,421.2	809.9	167.2	4,901.0

Source: IMC, 2002.

Table 4.2-5 - Acreage Analysis of Jurisdictional Areas to be Mined/Disturbed

FLUCS Code	WRAP Score									Sum of Acres
	<0.20	0.20 - 0.29	0.30 - 0.39	0.40 - 0.49	0.50 - 0.59	0.60 - 0.69	0.70 - 0.79	0.80 - 0.89	0.90 - 0.99	
211	0.0	2.7	28.9	14.9	0.6	0.0	0.2	0.0	0.0	47.2
212	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
213	0.0	0.0	2.3	13.8	0.0	0.4	0.0	0.0	0.0	16.6
310	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	4.6
321	0.0	0.0	0.0	0.0	2.6	3.4	0.0	0.0	0.0	5.9
329	0.0	0.0	0.0	0.0	1.6	3.6	0.7	0.0	0.0	5.9
330	0.0	0.0	0.0	0.0	8.0	0.7	0.2	0.0	0.0	8.8
411	0.0	0.0	0.0	0.0	10.0	36.8	17.7	4.5	0.0	69.1
425	0.0	0.0	0.0	2.0	11.0	39.3	11.8	1.1	0.0	65.2
427	0.0	8.9	0.0	9.5	36.4	45.9	0.0	0.3	0.0	101.1
434	0.0	1.6	7.7	11.3	26.7	95.9	27.8	0.0	0.0	171.1
438	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.8
511	0.0	0.1	0.1	1.4	2.7	1.4	1.1	0.2	0.0	7.0
512	1.5	0.4	4.0	7.5	10.4	5.6	3.7	0.0	0.0	32.9
534	0.2	0.1	2.7	2.9	3.6	1.2	0.1	0.2	0.0	11.2
611	0.0	0.0	0.0	0.0	16.4	28.4	17.6	6.8	0.0	69.2
613	0.0	0.0	0.0	0.0	0.4	0.0	22.9	1.3	0.0	24.5
615	0.0	0.0	4.2	5.2	0.0	21.9	0.0	0.0	0.0	31.4
616	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	2.9
617	0.0	0.0	10.1	24.1	39.1	94.5	256.0	29.9	4.1	457.8
620	0.0	0.0	0.0	0.6	0.0	10.1	16.1	0.0	0.0	26.7
630	0.0	0.0	0.0	5.7	10.4	16.0	48.0	1.3	0.0	81.4
641	0.0	0.4	2.5	41.1	101.9	219.0	229.9	104.7	34.1	733.6
643	2.0	0.7	6.7	49.1	84.0	76.0	47.0	4.6	3.8	273.9
644	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	1.2
646	0.0	6.9	28.1	106.6	216.4	86.8	42.8	25.9	0.0	513.6
743	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Subtotal:	4.6	21.9	97.4	298.6	582.7	787.1	749.4	180.9	42.1	2,764.7

Source: IMC, 2002.

Table 4.2-6 - Planting List for Bay and Gum Swamp (611/613*)

Scientific Name	Common Name	Stratum
Blechnum serrulatum	Swamp fern	Herb
Osmunda spp.	Cinnamon/royal/netted chain ferns	Herb
Peltandra virginica	Green arum	Herb
Saururus cernuus	Lizard's tail	Herb
Thelypteris sp.	Shield fern	Herb
Woodwardia sp.	Chain fern	Herb
Cornus foemina	Swamp dogwood	Shrub
Ilex cassine	Dahoon holly	Shrub
Itea virginica	Virginia willow	Shrub
Lyonia lucida	Fetterbush	Shrub
Rhodendron viscosum	Swamp azalea	Shrub
Sabal Minor	Dwarf palmetto	Shrub
Vaccinium corymbosum	Highbush blueberry	Shrub
Viburnum nudum	Possum haw	Shrub
Viburnum obovatum	Backhaw viburnum	Shrub
Acer rubrum	Red maple	Tree
Celtis laevigata	Hackberry	Tree
Cephalanthus occidentalis	Buttonbush	Tree
Gordonia lasianthus	Loblolly bay	Tree
Liquidambar styraciflua	Sweetgum	Tree
Magnolia virginiana	Sweetbay	Tree
Nyssa Salvatica var. biflora	Blackgum	Tree
Persea palustris	Swamp bay	Tree
Pinus elliottii	Slash pine	Tree
Quercus laurifolia	Laural oak	Tree
Quercus nigra	Water oak	Tree
Ulmus americana	American elm	Tree

Notes:

* = A dominance of bay and black gum will be planted, while other species will be utilized to obtain species diversity.

Herbs: Herbs will be planted on 5-foot average centers with at least 5 herb species listed above or otherwise approved by FDEP.

Shrubs: Shrubs will be planted on 5-foot average centers with at least 5 shrub species included above or otherwise approved by FDEP.

Trees: A minimum average density of 600 trees will be planted per acre (400 surviving), consisting of at least 5 tree species included above or otherwise approved for planting by FDEP.

Source: IMC, 2002.

Table 4.2-7 - Planting List for Hardwood Swamp (FLUCFCS 615/616/617*)

Scientific Name	Common Name	Stratum
Blechnum serrulatum	Swamp fern	Herb
Osmunda spp.	Cinnamon/royal/netted chain ferns	Herb
Peltandra virginica	Green arum	Herb
Saururus cernuus	Lizard's tail	Herb
Thelypteris sp.	Shield fern	Herb
Cephalanthus occidentalis	Buttonbush	Shrub
Cornus foemina	Swamp dogwood	Shrub
Ilex cassine	Dahoon holly	Shrub
Itea virginica	Virginia willow	Shrub
Rhodendron viscosum	Swamp azalea	Shrub
Sabal minor	Dwarf palmetto	Shrub
Vaccinium sp.	Blueberry	Shrub
Viburnum nudum	Possum haw	Shrub
Viburnum obovatum	Backhaw viburnum	Shrub
Acer rubrum	Red maple	Tree
Celtis laevigata	Hackberry	Tree
Fraxinus caroliniana	Popash	Tree
Gordonia lasianthus	Loblolly bay	Tree
Liquidambar styraciflua	Sweetgum	Tree
Magnolia virginiana	Sweetbay	Tree
Nyssa Salvatica var. biflora	Blackgum	Tree
Persea palustris	Swamp bay	Tree
Pinus elliottii	Slash pine	Tree
Quercus laurifolia	Laural oak	Tree
Quercus nigra	Water oak	Tree
Ulmus americana	American Elm	Tree

Notes:

* = Varying dominance of species and topographical design differentiates individual wetlands of this community type.

Herbs: Herbs will be planted on 5-foot average centers with at least 5 herb species listed above or otherwise approved by FDEP.

Shrubs: Shrubs will be planted on 5-foot average centers with at least 5 shrub species included above or otherwise approved by FDEP.

Trees: A minimum average density of 600 trees will be planted per acre (400 surviving), consisting of at least 5 tree species included above or otherwise approved for planting by FDEP.

Source: IMC, 2002.

Table 4.2-8 - Planting List for Wetland Coniferous (FLUCFCS 620*)

Scientific Name	Common Name	Stratum
Canna flacida	Golden canna	Herb
Iris hexagona	Iris	Herb
Juncus effusus	Softrush	Herb
Lachnanthes caroliniana	Redroot	Herb
Ludwigia repens	Red ludwigia	Herb
Nymphoides aquatica	Floating Hearts	Herb
Osmunda spp.	Cinnamon/royal/netted chain ferns	Herb
Panicum hemitomon	Maidencane	Herb
Peltandra virginica	Green arum	Herb
Polygonum punctatum	Smartweed	Herb
Pontederia cordata	Pickerelweed	Herb
Sagittaria lancifolia	Arrowhead	Herb
Saururus cernuus	Lizard's tail	Herb
Scirpus spp. (except californicus)	Bulrush	Herb
Spartina bakeri	Cordgrass	Herb
Thalia geniculata	Alligator flag	Herb
Cephalanthus occidentalis	Buttonbush	Shrub
Cornus foemina	Swamp dogwood	Shrub
Ilex cassine	Dahoon holly	Shrub
Itea virginica	Virginia willow	Shrub
Rhodendron viscosum	Swamp azalea	Shrub
Sabal minor	Dwarf palmetto	Shrub
Vaccinium sp.	Blueberry	Shrub
Viburnum nudum	Possum haw	Shrub
Viburnum obovatum	Backhaw viburnum	Shrub
Acer rubrum	Red maple	Tree
Celtis laevigata	Hackberry	Tree
Liquidambar styraciflua	Sweetgum	Tree
Nyssa Salvatica var. biflora	Blackgum	Tree
Quercus laurifolia	Laural oak	Tree
Quercus nigra	Water oak	Tree
Taxodium ascendens	Pond cypress	Tree
Taxodium distichum	Bald cypress	Tree
Ulmus americana	American elm	Tree

Notes:

* - Cypress will dominate the tree species. Other species will be utilized to increase diversity within the wetland system.

Herbs: Herbs will be planted on 5-foot average centers with at least 5 herb species listed above or otherwise approved by FDEP.

Shrubs: Shrubs will be planted on 5-foot average centers with at least 5 shrub species included above or otherwise approved by FDEP.

Trees: A minimum average density of 600 trees will be planted per acre (400 surviving), consisting of at least 5 tree species included above or otherwise approved by FDEP.

Source: IMC, 2002.

Table 4.2-9 - Planting List for Mixed Forest Swamp (FLUCFCS 630*)

Scientific Name	Common Name	Stratum
Blechnum serrulatum	Swamp fern	Herb
Osmunda spp.	Cinnamon/royal/netted chain ferns	Herb
Peltandra virginica	Green arum	Herb
Saururus cernuus	Lizard's tail	Herb
Thelypteris sp.	Shield fern	Herb
Woodwardia sp.	Chain fern	Herb
Cephalanthus occidentalis	Buttonbush	Shrub
Cornus foemina	Swamp dogwood	Shrub
Ilex cassine	Dahoon holly	Shrub
Itea virginica	Virginia willow	Shrub
Rhodendron viscosum	Swamp azalea	Shrub
Sabal minor	Dwarf palmetto	Shrub
Vaccinium corymbosum	Highbush blueberry	Shrub
Viburnum nudum	Possum haw	Shrub
Viburnum obovatum	Backhaw viburnum	Shrub
Acer rubrum	Red maple	Tree
Celtis laevigata	Hackberry	Tree
Fraxinus caroliniana	Popash	Tree
Gordonia lasianthus	Loblolly bay	Tree
Liquidambar styraciflua	Sweetgum	Tree
Magnolia virginiana	Sweetbay	Tree
Nyssa Salvatica var. biflora	Blackgum	Tree
Persea palustris	Swamp bay	Tree
Pinus elliottii	Slash pine	Tree
Quercus laurifolia	Laural oak	Tree
Quercus nigra	Water oak	Tree
Ulmus americana	American elm	Tree

Notes:

* = No dominance of species will be obtained.

Herbs: Herbs will be planted on 5-foot average centers with at least 5 herb species listed above or otherwise approved by FDEP.

Shrubs: Shrubs will be planted on 5-foot average centers with at least 5 shrub species included above or otherwise approved by FDEP.

Trees: A minimum average density of 600 trees will be planted per acre (400 surviving), consisting of at least 5 tree species included above or otherwise approved by FDEP.

Source: IMC, 2002.

Table 4.2-10 - Proposed Transitional Trees and Shrubs to be Planted In Upper Wetland Zone

PROPOSED TRANSITIONAL TREES AND SHRUBS TO BE PLANTED IN UPPER WETLAND ZONE (FLUCFCS CODES 425, 427, 434, ETC.) *			
TREES		**SHRUBS**	
Common Name	**Scientific Name (Status)**	**Common Name**	**Scientific Name (Status)**
Pignut Hickory	*Carya glabra (UPL)*	Chokecherry	*Aronia arbutifolia (FACW)*
Persimmon	*Diospyros virginiana (FAC)*	Eastern false-willow**	*Baccharis halimifolia (FAC)***
Slash pine	*Pinus elliottii (UPL)*	groundsel bush	*Baccharis glomeruliflora (FAC)*
Red mulberry	*Morus rubra (FAC)*	Milk buckthorn	*Bumelia reclinata (FAC)*
Cabbage palm	*Sabal palmetto (FAC)*	Fetterbush	*Lyonia lucida (FACW)*
Live oak	*Quercus virginiana (UPL)*	Wax myrtle**	*Myrica cerifera (FAC)***
		Saw palmetto	*Serenoa repens (UPL)*

* If commercially available.

** Not to be planted, these species are expected to recruit naturally.

PROPOSED TRANSITIONAL TREES AND SHRUBS TO BE PLANTED IN UPPER WETLAND ZONE (FLUCFCS CODES 410/411/320/321, ETC.) *			
TREES		**SHRUBS**	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Slash pine	*Pinus elliottii (UPL)*	Eastern false-willow**	*Baccharis halimifolia (FAC)***
Live oak	*Quercus virginiana (UPL)*	Tarflower	*Befaria racemosa (UPL)*
Cabbage palm	*Sabal palmetto (FAC)*	Gallberry	*Ilex glabra (UPL)*
		Fetterbush	*Lyonia lucida (FACW)*
		Wax myrtle**	*Myrica cerifa (FAC)***
		Shining Sumac	*Rhus copallina (UPL)*
		Saw palmetto	*Serenoa repens (UPL)*

* If commercially available.

** Not to be planted, these species are expected to recruit naturally.

Source: IMC, 2002.

Table 4.2-11 - Planting List for Freshwater Marsh (FLUCFCS 641)*

Scientific Name	Common Name	Zone
Bacopa caroliniana	Blue water-hyssop	1
Bacops monnieri	Water-hyssop	1
Bidens laevis	Bur-marigold	1
Canna flacida	Golden canna	1
Carex sp.	Sedge	1&2
Cephalanthus occidentalis	Buttonbush	2
Cladium jamaicense	Sawgrass	1
Cyperus sp.	Sedge	1
Eleocharis sp.	Spikerush	1&2
Hypericum fasciulatum	St. John's wort	1
Irus virginica	Iris	2
Juncus effusus	Softrush	1&2
Juncus sp.	Rush	1&2
Ludwigia repens	Red ludwigia	1
Nyssa sylvatica var. biflora	Blackgum	1
Panicum hemitomon	Maidencane	1&2&3
Polygonum punctatum	Smartweed	1&2&3
Pontederia cordata	Pickerelweed	2&3
Rhynchospora sp.	Beakrush	1
Sagittaria lancifolia	Arrowhead	2&3
Scirpus validus	Bulrush	2&3
Spartina bakeri	Cordgrass	1
Thalia geniculata	Alligator flag	2&3
Xyris sp.	Yellow-eyed grass	1

Note:

* = These wetlands will be created by one or more of the following methods:

1. Spreading salvaged topsoil from a donor freshwater marsh;

2. Manually planting bare root stock of at least 10 species listed above (or otherwise approved by FDEP) on one-foot average centers; or

3. Manually planting plus of at least 10 species listed above (or otherwise approved by FDEP) on three-foot average centers.

Zone 1 = Approximate seasonal high water level (SHL) to normal water level (NWL).

Zone 2 = Approximate normal water level (NWL) to seasonal low water level (SWL).

Zone 3 (if applicable) - Approximate seasonal low water level (WL) and deeper.

Source: IMC, 2002.

Table 4.2-12 - Planting List for Shrub Marsh (FLUCFCS 646)*

Scientific Name	Common Name	Zone
Bidens laevis	Bur-marigold	1
Canna flacida	Golden canna	1
Cephalanthus occidentalis	Buttonbush	2&3
Cyperus sp.	Sedge	1
Cladium jamaicense	Sawgrass	2&3
Hypericum fasciulatum	St. John's wort	1
Juncus effusus	Softrush	1&2
Ludwigia repens	Red ludwigia	1
Nyssa sylvatica var. biflora	Blackgum	1
Panicum hemitomon	Maidencane	1
Polygonum punctatum	Smartweed	1&2
Pontederia cordata	Pickerelweed	2&3
Rhynchospora sp.	Beakrush	1
Sagittaria lancifolia	Arrowhead	2&3
Spartina bakeri	Cordgrass	1
Thalia geniculata	Alligator flag	2&3
Xyris sp.	Yellow-eyed grass	1

Notes:
Salix caroliniana (Carolina willow) and *Myrica cerifera* (wax myrtle) are components of native shrub marshes. It is anticipated that these species will become established, however, they will not be planted due to their potential invasive nature.

* = These wetlands will be created by one or more of the following methods:

1. Spreading salvaged topsoil from a donor freshwater marsh;
2. Manually planting bare root stock of at least 10 species listed above (or otherwise approved by FDEP) on one-foot average centers; or
3. Manually planting plugs of at least 10 species listed above (or otherwise approved by FDEP) on three-foot average centers.

Zone 1 = Seasonal high water level (SHL) to normal water level (NWL).
Zone 2 = Normal water level (NWL) to seasonal low water level (SLW).
Zone 3 (if applicable) = Seasonal low water level (SLW) and below.
Source: IMC, 2002.

Table 4.2-13 - Isolated Wetland Analysis Summary

Wetland Type	Wetland Name	Expected Hydroperiod (months)	Depth of Water during Inundation	Average Stage (inches)
611 Bay Swamp	G504R G513R G501R	6 –12	Saturated to 6 inches	-1.92 1.02 3.37
617 Mixed Wetland Hardwoods	G510R G512R G514R G515R E505R E512R	3 - 9	Saturated to 12 inches	6.74 2.16 4.74 3.52 9.86 7.52
620 Wetland Coniferous Forest	H003R	2 - 5	Saturated to 4 inches	-0.87
641 Freshwater Marsh	G004R G016R G506R E010R E015R	7 - 12	Saturated 6 to 18 inches	-5.6 3.29 13.97 15.93 14.57
643 Wet Prairie	G006R G009R G015R G516R E016R H007R	2 - 5	Saturated to 4 inches	-11.19 -5.3 -0.02 -0.51 2.98 -3.89
646 Shrub Marsh	G001R	7 - 12	Saturated 6 to 12 inches	8.96

Source: IMC, 2002.

Table 4.2-14 - Planting List for Ephemeral Marsh*

Scientific Name	Common Name	Zone
Agalinis linifolia	Flax-leaf false-foxglove	1
Andropogon glomeratus var. glaucopsis	Bushy bluestem	1
Andropogon virginicus	Broomsedge bluestem	1
Axonopus furcatus	Carpet grass	1
Cyperus haspan	Sheathed flatsedge	1
Fuirena scirpoidea	Umbrella-sedge	1
Hypericum brachyphyllum	Coastal plain St. John's-wort	1
Juncus effusus	Soft rush	1&2
Juncus scirpoides	Needlepod rush	1
Leersia hexandra	Southern cutgrass	1
Ludwigia suffruticosa	Shrubby primrose willow	1&2
Luziola fluitans	Southern watergrass	1
Panicum hemitomon	Maidencane	1&2
Panicum longifolium	Tall thin panicum	1
Panicum rigidulum	Redtop panicum	1
Panicum tenerum	Bluejoint panicum	1
Paspalum dissectum	Mudbank crowngrass	1
Paspalum distichum	Knotgrass	1
Paspalum laeve	Field paspalum	1
Pluchea rosea	Rosy camphorweed	1
Pontederia cordata	Pickerelweed	2
Rhexia mariana	Pale meadowbeauty	1
Rhynchospora cephalantha	Bunched beaksedge	1
Rhynchospora decurrens	Swampforest beaksedge	1
Rhynchospora fascicularis	Fascicled beaksedge	1
Rhynchospora microcarpa	Southern beaksedge	1
Rhynchospora microcephala	Bunched Beaksedge	1
Sacciolepis striata	American cupscale	1
Sagittaria graminea	Grassy arrowhead	1
Sagittaria lancifolia	Duckpotato	2
Spartina bakeri	Sand cordgrass	1
Xyris elliottii	Elliott's yelloweyed grass	1
Xyris fimbriata	Fringed yelloweyed grass	1

Note:

* = The composition of ephemeral marshes is highly variable. These wetlands will be created by one or more of the following methods:

1. Spreading salvaged topsoil from a donor freshwater marsh;

2. Manually planting bare root stock of at least 10 species listed above (or otherwise approved by FDEP) on one-foot average centers; or

3. Manually planting plugs of at least 10 species listed above (or otherwise approved by FDEP) on three-foot average centers.

Zone 1 = Approximate seasonal high water level (SHL) to normal water level (NWL)/ground surface.

Zone 2 = Deeper pockets below normal ground surface.

Source: IMC, 2002.

Table 4.2-15 - Planting List for Wet Prairie (FLUCFCS 643*

Scientific Name	Common Name	Zone
Agalinis fasciculata	False fosglove	1
Agalinis linifolia	Flax-leaf false-foxglove	1
Andropogon glomeratus	Bushybeard bluestem	1
Andropogon virginicus	Broomsedge	1
Aristida stricta	Wiregrass	1
Bidens laevis	Bur-marigold	1
Canna flacida	Golden canna	2
Cladium jamaicense	Sawgrass	1&2
Cyperus sp.	Sedge	1
Eriocaulon decangulare	Hat pins	1
Hypericum fasciulatum	St. John's wort	1
Juncus effusus	Softrush	1&2
Lachnocaulon anceps	Bog buttons	1
Ludwigia repens	Red ludwigia	1
Panicum hemitomon	Maidencane	1&2
Polygala lutea	Wild bachelor's buttons	1
Polygala nana	Wild bachelor's buttons	1
Polygonum punctatum	Smartweed	1&2
Rhexia mariana	Meadow beauty	1
Rhynchospora sp.	Beakrush	1
Sabatia grandiflora	Marsh pink	1
Solidago fistulosa	Pinebarren goldenrod	1
Spartina bakeri	Cordgrass	1
Xyris sp.	Yellow-eyed grass	1

Note:

* = These wetlands will be created by one or more of the following methods:

1. Spreading salvaged topsoil from a donor freshwater marsh;

2. Manually planting bare root stock of at least 10 species listed above (or otherwise approved by FDEP) on one-foot average centers; or

3. Manually planting plugs of at least 10 species listed above (or otherwise approved by FDEP) on three-foot average centers.

Zone 1 = Approximate seasonal high water level (SHL) to normal water level (NWL)/ground surface

Zone 2 = Deeper pockets below normal ground surface.

Source: IMC, 2002.

Table 4.4-1 - Potential Impacts to State and Federally Listed Plants and Wildlife

Common Name	Scientific Name	Impacts
Wildlife		
American alligator	*Alligator mississippiensis*	Partial loss of habitat and creation of new habitat (net increase in habitat)
Arctic peregrine falcon	*Falco peregrinus tundrius*	None
Gopher tortoise	*Gopherus polyphemus*	Loss of individuals not captured for relocation; loss of habitat and creation of new habitat
Eastern indigo snake	*Drymarchon corais couperi*	Partial loss of habitat; possible loss of individuals not captured for relocation or able to be herded to safe areas and creation of new habitat
Gopher frog	*Rana capito*	Loss of individuals not captured for relocation; loss of habitat and creation of new habitat
Burrowing owl	*Speotyto cunicularia*	Partial loss of habitat; possible loss of individuals unable to flush from burrows
Florida sandhill crane	*Grus canadensis pratensis*	Partial loss of habitat; creation of new habitat
Bald eagle	*Haliaeetus l. leucocephalus*	Partial loss of habitat; creation of new habitat
Little blue heron	*Egretta caerulea*	Partial loss of habitat; creation of new habitat
White ibis	*Eudocimus albus*	Partial loss of habitat; creation of new habitat
Snowy egret	*Egretta thula*	Partial loss of habitat; creation of new habitat
Tricolored heron	*Egretta tricolor*	Partial loss of habitat; creation of new habitat
Woodstork	*Mycteria americana*	Partial loss of habitat; creation of new habitat
Roseate spoonbill	*Ajaja ajaja*	Partial loss of habitat; creation of new habitat
Shermans fox squirrel	*Sciurus niger shermani*	Displaced to unmined hammocks and creation of new habitat
Florida mouse	*Podomys floridanus*	Loss of individuals unable to trap for relocation and creation of new habitat
Round-tailed muskrat	*Neofiber alleni*	Partial loss of habitat; creation of new habitat
Florida panther	*Felis concolor coryi*	Partial loss of habitat; creation of new habitat

Common Name	Scientific Name	Impacts
Plants		
Butterfly orchid	*Encyclia tampense*	Loss of some individuals in mined areas; most of population undisturbed
Nodding pinweed	*Lechea cerenua*	Loss of one population if not relocated with the soil; second population undisturbed
Cinnamon fern	*Osmunda cinnamomea*	Loss of populations in mined swamps; most of swamps undisturbed
Royal fern	*Osmunda regalis var spectabilis*	Loss of populations in mined swamps; most of swamps undisturbed
Wild coco	*Pteroglossaspis ecristata*	Lost to mining unless transplanted
Leafless beaked orchid	*Stenorrhynchos lanceolatus*	Lost to mining unless transplanted
Cardinal air plant	*Tillandsia fasciculata*	Loss of individuals in mining areas; substantial population in unmined areas
Giant air plant	*Tillandsia utricularia*	Loss of individuals in mining areas; substantial population in unmined areas

Source: IMC, 2002.

Table 4.5-1 - Expected Streamflow During Mining Operatios

Drainage Basin	Pre-mine Drainage Area (acres)	Pre-mine Streamflow (cfs)	Year 5 Drainage Area	Year 5 Streamflow (cfs)	Year 10 Drainage Area	Year 10 Streamflow (cfs)	Year 15 Drainage Area	Year 15 Streamflow (cfs)
Brushy Creek	7428.84	8.95	7090.76	8.54	4693.83	5.68	3504.13	4.27
Oak Creek	4758.53	5.70	4637.01	5.55	3879.73	4.66	2141.88	2.60
Horse Creek	4204.39	5.61	2436.49	4.27	2317.01	4.18	2184.55	4.08
Brady Branch	2003.16	2.27	1769.25	2.00	775.43	0.89	1040.66	1.19
Hickory Creek	1360.51	1.75	1360.51	1.75	1352.18	1.74	1240.26	1.60
West Fork Horse Cr	851.45	1.17	528.17	0.91	824.29	1.14	723.32	1.06
Troublesome Creek	60.9	0.09	60.9	0.09	60.9	0.09	5.92	0.01
Myakka River	7.72	0.01		0.00		0.00		0.00
Total	20675.5	25.55	17883.09	23.12	13903.37	18.39	10840.72	14.81

Streamflow with NPDES
By basin

Horse Basin	14487.84	17.99	11824.67	15.73	8610.56	11.90	7452.66	10.60
NPDES Discharge		0		1.6		3.6		6.8
Horse with NPDES		17.99		17.33		15.50		17.40
Peace Tributaries	6179.94	7.54	6058.42	7.39	5292.81	6.49	3388.06	4.21
Total both basins		25.53		24.72		21.99		21.61

Drainage Basin	Year 17 Drainage Area	Year 17 Streamflow (cfs)	Year 18 Drainage Area	Year 18 Streamflow (cfs)	Year 20 Drainage Area	Year 20 Streamflow (cfs)	Post-mining Drainage Area (acres)	Post-mining Streamflow (cfs)
Brushy Creek	3262.95	3.98	3371.76	4.11	3116.20	3.80	7117.0	8.70
Oak Creek	2101.01	2.55	2271.34	2.75	2922.35	3.52	4751.2	5.38
Horse Creek	1982.69	3.93	2191.45	4.09	2873.71	4.60	4348.6	5.57
Brady Branch	1109.82	1.27	1109.82	1.27	1248.00	1.42	2333.4	2.80
Hickory Creek	591.49	0.80	242.45	0.36	117.39	0.21	1243.0	1.13
West Fork Horse Cr	447.24	0.85	440.19	0.84	663.66	1.02	832.5	0.99
Troublesome Creek	0.00	0.00	0.00	0.00	33.22	0.05	42.0	0.06
Myakka River		0.00		0.00		0.00	7.7	0.01
Total	9495.20	13.36	9627.01	13.41	10974.53	14.62	20675.5	24.65

Streamflow with NPDES
By basin

Horse Basin	6802.70	10.02	7113.22	10.30	7901.57	10.84	14631.55	18.07
NPDES Discharge		6.8		6.8		6.8		
Horse with NPDES		16.82		17.10		17.64		18.07
Peace Tributaries	2692.50	3.35	2513.79	3.12	3072.96	3.78	6036.24	6.58
Total both basins		20.16		20.21		21.42		24.64

Source: IMC, 2002.

Table 4.5-2 - Estimated ET for Various Land Uses

Land Use	Evapotranspiration (in/yr)
Active Clay Areas	50
Inactive Clay Areas	42
Active Mine Areas	30
Inactive Mine Area	35
Mine Corridors	20
Tailings Areas	25
Reclaimed Areas	39

Source: IMC, 2002.

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Jan-03	7.26	3.09	9320	0	0
Feb-03	2.64	3.74	9320	0	0
Mar-03	5.09	6.19	9320	0	0
Apr-03	3.49	7.12	9320	0	0
May-03	1.27	7.5	9320	0	0
Jun-03	4.81	7.23	9320	0	0
Jul-03	10.91	7.17	9320	0	5.09
Aug-03	4.76	6.98	9320	0	1.47
Sep-03	8.44	6.21	9320	0	56.24
Oct-03	0.59	5.63	9320	0	0
Nov-03	0.76	4.64	9320	0	0
Dec-03	1.78	3.05	9320	0	0
Jan-04	0.03	3.35	9606	0	0
Feb-04	1.12	4.42	9606	0.47	0
Mar-04	0.3	6.42	9606	12.69	0
Apr-04	1.56	8.09	9606	12.21	0
May-04	2.74	8.03	9606	10.84	0
Jun-04	14.97	6.87	9606	0	0
Jul-04	10.05	6.37	9606	0	0.77
Aug-04	7.92	7.06	9606	0	45.05
Sep-04	3.58	6.64	9606	0	0
Oct-04	0.1	5.84	9606	0	0
Nov-04	0.16	4.26	9606	0	0
Dec-04	2.32	2.73	9606	0	0
Jan-05	0.5	3.35	10006	0	0
Feb-05	1.62	4.08	10006	2.08	0
Mar-05	0.88	6.44	10006	12.93	0
Apr-05	0.23	7.22	10006	14.23	0
May-05	6.87	8.05	10006	6.61	0
Jun-05	7.02	7.4	10006	5.45	0
Jul-05	8.45	6.97	10006	0	0
Aug-05	5.41	6.75	10006	0	0
Sep-05	9.41	6.02	10006	0	16.08
Oct-05	10.36	5.19	10006	0	92.59
Nov-05	0.36	3.87	10006	0	0
Dec-05	0.6	2.68	10006	0	0
Jan-06	1.04	2.9	10925	0	0
Feb-06	0.69	4.34	10925	0	0
Mar-06	0.35	6.25	10925	6.22	0
Apr-06	1.6	7.13	10925	13.93	0
May-06	8.39	7.39	10925	5.96	0
Jun-06	10.74	6.4	10925	0	0
Jul-06	9.09	7.55	10925	0	39.13
Aug-06	6.33	7.75	10925	0	21.13
Sep-06	3.26	6.4	10925	0	0
Oct-06	1.57	5.45	10925	0	0
Nov-06	1.26	3.18	10925	0	0

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Dec-06	2.56	2.5	10925	0	0
Jan-07	2.41	3.05	11611	0	0
Feb-07	1.77	4.05	11611	0	0
Mar-07	0.84	6.19	11611	9.92	0
Apr-07	0.28	7.71	11611	15.17	0
May-07	4.05	7.97	11611	10.48	0
Jun-07	8.06	7.83	11611	4.53	0
Jul-07	12.46	7.41	11611	0	29.33
Aug-07	5.34	6.27	11611	0	21.25
Sep-07	5.38	5.91	11611	0	26.54
Oct-07	1.55	4.49	11611	0	0
Nov-07	2.66	3.55	11611	0	0
Dec-07	4.83	3	11611	0	15.16
Jan-08	2.93	3.09	11747	0	0
Feb-08	3.59	2.63	11747	0	14.84
Mar-08	2.09	5.64	11747	0	0
Apr-08	0	7.36	11747	0	0
May-08	5.68	8.37	11747	0.18	0
Jun-08	7.25	6.38	11747	0	0
Jul-08	10.4	6.73	11747	0	23.85
Aug-08	6.41	7.32	11747	0	22.45
Sep-08	2.7	5.88	11747	0	0
Oct-08	1.43	4.89	11747	0	0
Nov-08	0.97	3.98	11747	0	0
Dec-08	2.9	2.78	11747	13.90	0
Jan-09	7.84	3.45	12236	0	0
Feb-09	1.41	3.43	12236	0	0
Mar-09	1.52	5.9	12236	0	0
Apr-09	1.72	6.92	12236	0	0
May-09	7.08	6.97	12236	0	0
Jun-09	8	7.75	12236	0	0
Jul-09	7.16	7.69	12236	0	8.42
Aug-09	8.62	7.05	12236	0	65.41
Sep-09	11.56	5.29	12236	0	133.83
Oct-09	0.45	5.31	12236	0	0
Nov-09	0.72	3.85	12236	0	0
Dec-09	1.91	3.07	12236	0	0
Jan-10	2.25	2.91	13257	9.45	0
Feb-10	2.37	3.63	13257	13.86	0
Mar-10	1.7	5.22	13257	15.77	0
Apr-10	4.66	6.93	13257	14.27	0
May-10	6.39	7.6	13257	0	0
Jun-10	10.05	8.5	13257	0	34.98
Jul-10	4.17	7.3	13257	0	0
Aug-10	6.02	7.94	13257	0	8.56
Sep-10	2	6.67	13257	0	0
Oct-10	1.24	5.97	13257	0	0

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Nov-10	3.08	3.64	13257	0	0
Dec-10	0.78	3.02	13257	9.18	0
Jan-11	0.58	5.25	12527	15.77	0
Feb-11	4.37	6.26	12527	17.04	0
Mar-11	1.35	8.35	12527	15.77	0
Apr-11	0.08	9.35	12527	16.29	0
May-11	2.91	10.54	12527	15.77	0
Jun-11	8.09	8.72	12527	16.29	0
Jul-11	2.21	8.94	12527	15.77	0
Aug-11	6.91	7.58	12527	15.77	0
Sep-11	8.12	6.54	12527	16.29	0
Oct-11	0.22	6.02	12527	15.77	0
Nov-11	0.44	4.3	12527	16.29	0
Dec-11	1.38	3.28	12527	15.77	0
Jan-12	1.13	3.77	12732	15.77	0
Feb-12	3.08	4.54	12732	16.85	0
Mar-12	5.35	6.04	12732	11.26	0
Apr-12	4.32	7.32	12732	12.70	0
May-12	6.5	8.21	12732	0	0
Jun-12	15.96	6.98	12732	0	140.69
Jul-12	9.08	8.28	12732	0	69.28
Aug-12	2.66	7.78	12732	0	0
Sep-12	10.95	6.07	12732	0	85.73
Oct-12	1.73	5.28	12732	0	0
Nov-12	0.82	3.98	12732	0	0
Dec-12	0.98	3.63	12732	0	0
Jan-13	4.29	2.75	12862	0	0
Feb-13	7.99	3.54	12862	0	19.00
Mar-13	7.45	6.39	12862	0	55.70
Apr-13	2.75	7.65	12862	0	0
May-13	1.79	8.77	12862	0	0
Jun-13	8.25	7.54	12862	0	0
Jul-13	9.66	8.55	12862	0	37.47
Aug-13	9.49	7.44	12862	0	82.81
Sep-13	7.42	5.73	12862	0	63.69
Oct-13	3.14	5.58	12862	0	0
Nov-13	2.22	4.09	12862	0	0
Dec-13	3.79	2.67	12862	0	0
Jan-14	0.72	3.09	12996	0	0
Feb-14	2.44	4.86	12996	0	0
Mar-14	3.45	6.28	12996	0	0
Apr-14	1.73	7.72	12996	7.41	0
May-14	6.13	8.12	12996	6.57	0
Jun-14	3.82	8.02	12996	13.02	0
Jul-14	7.7	8.56	12996	0	0
Aug-14	6.85	8.1	12996	0	0
Sep-14	5.1	8.31	12996	0	0

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Oct-14	0.36	7.12	12996	0	0
Nov-14	1.3	4.68	12996	0	0
Dec-14	0.47	3.89	12996	0	0
Jan-15	0.96	4.35	8220	10.84	0
Feb-15	0.84	5.08	8220	14.49	0
Mar-15	2.08	8.49	8220	15.74	0
Apr-15	2.63	7.75	8220	14.66	0
May-15	4.95	10.28	8220	14.09	0
Jun-15	7.33	9.92	8220	11.42	0
Jul-15	3.63	8.23	8220	14.14	0
Aug-15	10.27	6.82	8220	7.16	0
Sep-15	7.51	7.14	8220	9.61	0
Oct-15	2.81	6.43	8220	13.88	0
Nov-15	1.25	4.73	8220	14.20	0
Dec-15	0.75	4.1	8220	14.46	0
Jan-16	2.66	3.97	9010	15.77	0
Feb-16	1.88	4.99	9010	16.29	0
Mar-16	5.78	6.66	9010	10.40	0
Apr-16	0.73	9.25	9010	16.29	0
May-16	2.22	10.47	9010	15.77	0
Jun-16	11.65	7.87	9010	3.42	0
Jul-16	9.08	8	9010	0	0
Aug-16	7.06	7.66	9010	0	0
Sep-16	4.79	7.01	9010	0	0
Oct-16	3.84	6.82	9010	0	0
Nov-16	0.82	4.34	9010	0	0
Dec-16	5.51	3.42	9010	0	0
Jan-17	2.96	3.62	9694.7	0	0
Feb-17	1.99	3.99	9694.7	4.71	0
Mar-17	7.03	6.38	9694.7	0	0
Apr-17	0.16	8.6	9694.7	0	0
May-17	3.02	9.03	9694.7	14.78	0
Jun-17	4.47	9.12	9694.7	15.06	0
Jul-17	8.56	7.67	9694.7	9.35	0
Aug-17	5.16	7.34	9694.7	0.20	0
Sep-17	3.35	6.8	9694.7	13.33	0
Oct-17	4.51	5.74	9694.7	0	0
Nov-17	11.18	3.73	9694.7	0	24.52
Dec-17	0.74	3.66	9694.7	0	0
Jan-18	1.77	3.15	9827.0	0	0
Feb-18	2.56	4.55	9827.0	0	0
Mar-18	5.55	6.64	9827.0	0	0
Apr-18	0.7	8.32	9827.0	0	0
May-18	3.24	8.98	9827.0	15.46	0
Jun-18	4.48	8.51	9827.0	13.97	0
Jul-18	12.45	8.09	9827.0	0	0
Aug-18	8.06	7.45	9827.0	0	8.48

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Sep-18	7.16	6.59	9827.0	0	34.89
Oct-18	0.65	6.43	9827.0	0	0
Nov-18	3.44	4.07	9827.0	0	0
Dec-18	1.17	3.34	9827.0	0	0
Jan-19	1.48	4.04	10319.7	6.41	0
Feb-19	0.22	5.08	10319.7	17.46	0
Mar-19	2.77	6.48	10319.7	15.77	0
Apr-19	3.38	8.01	10319.7	16.29	0
May-19	1.76	9.94	10319.7	15.77	0
Jun-19	7.2	8.18	10319.7	16.29	0
Jul-19	5.32	7.65	10319.7	15.77	0
Aug-19	4.76	8.23	10319.7	15.77	0
Sep-19	7.11	6.54	10319.7	0	0
Oct-19	0.91	5.92	10319.7	2.95	0
Nov-19	1.23	4.53	10319.7	16.29	0
Dec-19	4.11	2.82	10319.7	12.79	0
Jan-20	0.14	4.25	11172.6	15.77	0
Feb-20	4.96	5.35	11172.6	5.03	0
Mar-20	0.68	7.31	11172.6	15.77	0
Apr-20	2.71	7.74	11172.6	16.29	0
May-20	2.05	9.43	11172.6	15.77	0
Jun-20	5.34	8.79	11172.6	16.15	0
Jul-20	10.76	6.87	11172.6	0	0
Aug-20	10.8	7.07	11172.6	0	39.21
Sep-20	5.65	6.98	11172.6	0	15.50
Oct-20	1.43	5.93	11172.6	0	0
Nov-20	0.45	4.52	11172.6	0	0
Dec-20	1.03	3.71	11172.6	0	0
Jan-21	2.59	3.69	11040.8	6.11	0
Feb-21	1.31	4.51	11040.8	14.73	0
Mar-21	4.35	6.05	11040.8	12.33	0
Apr-21	4.18	7.09	11040.8	12.95	0
May-21	4.05	7.17	11040.8	13.33	0
Jun-21	12.94	7.85	11040.8	0	31.39
Jul-21	10.25	6.76	11040.8	0	85.63
Aug-21	7.37	7.42	11040.8	0	37.28
Sep-21	2.21	7.37	11040.8	0	0
Oct-21	3.47	5.23	11040.8	0	0
Nov-21	0.12	3.96	11040.8	0	0
Dec-21	0.28	3.71	11040.8	4.46	0
Jan-22	0.46	3.57	10954.7	14.54	0
Feb-22	5.21	4.05	10954.7	9.11	0
Mar-22	2.07	6.28	10954.7	14.61	0
Apr-22	6.44	6.93	10954.7	1.04	0
May-22	1.61	8.8	10954.7	15.77	0
Jun-22	12.75	8.33	10954.7	0	0
Jul-22	2.91	8.87	10954.7	0	0

Table 4.5-3 - Fort Green & Ona Mine Monthly Water Budget (Model Summary)

Month	Rainfall (in)	Pan Evaporation (in)	Catchment Area (acres)	Makeup Req'd (mgd)	Discharge (cfs)
Aug-22	12.76	5.64	10954.7	0	86.12
Sep-22	4.95	5.59	10954.7	0	15.42
Oct-22	2.95	5.05	10954.7	0	0
Nov-22	1.55	3.92	10954.7	0	0
Dec-22	0.69	3.2	10954.7	0	0
Jan-23	5.93	3.05	9693.2	0	0
Feb-23	2.15	3.73	9693.2	0	0
Mar-23	5.52	4.49	9693.2	0	0
Apr-23	4.34	7.73	9693.2	0	0
May-23	2.42	8.06	9693.2	0	0
Jun-23	7.62	8.33	9693.2	0	0
Jul-23	7.47	8.03	9693.2	0	0
Aug-23	6.24	7.52	9693.2	0	0
Sep-23	5.23	6.01	9693.2	0	0
Oct-23	5.16	5.21	9693.2	0	12.85
Nov-23	0.72	3.49	9693.2	0	0
Dec-23	1.27	3.3	9693.2	0	0
Jan-24	3.2	3.66	9010.1	0	0
Feb-24	1.58	4.07	9010.1	0.85	0
Mar-24	3.34	6.94	9010.1	14.35	0
Apr-24	1.45	7.57	9010.1	16.13	0
May-24	2.71	8.16	9010.1	15.48	0
Jun-24	13.04	6.94	9010.1	0	0
Jul-24	7.29	6.78	9010.1	0	9.09
Aug-24	7.44	7.44	9010.1	0	26.56
Sep-24	15.015	4.98	9010.1	0	140.37
Oct-24	3.035	4.81	9010.1	0	0
Nov-24	1.49	3.88	9010.1	0	0
Dec-24	2.33	3.1	9010.1	0	0
Average	50.75	72.64	10853.1	4.61	6.83

Source: IMC, 2002.

Table 4.5-4 - Basin Characteristics for Ona Mine Site - Pre-Mining versus Post-Reclamation

Basin	Drainage Area Pre-Mining (acres)	Drainage Area Post-Mining (acres)	Acres Changed from Pre to Post (acres)	Percent change in Basin Size Pre to Post
Brushy Creek	7428.84	7117.01	-311.83	-4.20%
Oak Creek	4758.53	4751.17	-7.36	-0.15%
Horse Creek	4204.39	4348.62	144.23	3.43%
Brady Branch	2003.16	2333.41	330.25	16.49%
Hickory Creek	1360.51	1243.04	-117.47	-8.63%
West Fork Horse Creek	851.45	832.51	-18.94	-2.22%
Troublesome Creek	60.9	42.03	-18.87	-30.99%
Myakka River	7.72	7.72	0.00	0.00%
Totals	20675.5	20675.5		

Horse Creek Sub-Basins	14487.84	14631.549	143.71	0.99%
Peace River Sub-Basins	6179.94	6036.239	-143.70	-2.33%
Myakka River Basin	7.72	7.72	0.00	0.00%
Totals	20675.5	20675.5		

Source: Golder, 2002, IMC, 2002.

Table 4.5-5 - Runoff Characteristics Ona Mine Site - Post Reclamation

Drainange Basin	Area (Acres)	Wetland (Acres)		Upland** (Acres)	ET (in/yr)	Streamflow (in/yr)	Streamflow (cfs)	Baseflow (in/yr)	Baseflow (cfs)	Runoff (in/yr)	Runoff (cfs)
		Riparian*	Other								
Brushy Creek	7117.0	1132.9	910.8	5073.3	39.4	10.6	8.70	0.8	0.66	9.8	8.05
Oak Creek	4751.2	1048.3	730.6	2972.3	40.2	9.8	5.38	0.4	0.22	9.4	5.16
Horse Creek	4348.6	483.8	552.7	3312.1	38.9	11.1	5.57	5.7	2.85	5.4	2.72
Brady Branch	2333.4	451.8	235.5	1646.1	39.6	10.4	2.80	0.4	0.11	10.0	2.69
Hickory Creek	1243.0	546.8	104.8	591.5	42.1	7.9	1.13	0.1	0.01	7.8	1.12
West Fork Horse Creek	832.5	109.4	190.3	532.9	39.6	10.4	0.99	5.7	0.55	4.7	0.45
Troublesome Creek	42.0	0.0	0.0	42.0	37.0	13.0	0.06	0.1	0.00	12.9	0.06
Myakka River (No Mining) (1)	7.7	0.0	0.0	7.7	37.0	13.0	0.01	0.1	0.00	12.9	0.01
Area Weighted Average	20675.5	3773.0	2724.6	14177.9	39.64	10.4	24.65				

* = Includes Lake Areas
** = Includes Reclaimed Clay Areas
1 = No Change to Basin

30-year Rainfall from Figure 3.5-2 for period 1970-1999 in inches/yr = 51
Recharge assumed to be 1 inch/year

Estimated streamflow in Horse Creek Basin from Ona Site (cfs) 18.07
Estimated streamflow in Peace River tributaries from Ona Site (cfs) 6.58

Source:
Golder, 2002, IMC, 2002.

Table 4.6-1 - Mine Recirculation System Water Quality, used in Ditch and Berm System

Parameter	Units	Minimum	Mean	Maximum	Count
pH	Std Units	6.23	7.01	7.71	8
Conductance	µmhos/cm	97	351	808	8
Temperature	˚C	20.1	26.4	31.8	8
Turbidity	NTU	5	116.4	286	8
Dissolved Oxygen	mg/L	5.4	7.2	8.9	4
Color	PCU	20	75	150	4
Total Suspend Solids	mg/L	3	93.9	272	8
NVSS	mg/L	1	75.1	238	8
TDS	mg/L	92	243	445	8
Total Phosphorus	mg/L	0.45	4.1	12.81	8
Ortho-P	mg/L	0.005	0.5	1.78	6
TKN	mg/L	0.3	1.2	3.5	8
NOX	mg/L	0.02	0.3	1.7	8
Sulfate	mg/L	1	70.4	159	7
Fluoride	mg/L	0.31	1	2.14	7
Potassium	mg/L	0.41	3	4.84	4
Magnesium	mg/L	2.42	8.3	12.5	4
Calcium	mg/L	10.2	21.5	42.6	4
Sodium	mg/L	3.49	17	34.3	4
Alkalinity	mg/L $CaCO_3$	31	74.3	146	4
Chloride	mg/L	6	14.3	19	4
Radium-226	pCi/L	1	1	1	4
Iron	mg/L	0.2	1.7	4.02	4
Silica	mg/L	1	6.5	11	4

Source: IMC, 2002.

Table 4.6-2 Comparison of Typical Phosphate Mine NPDES Outflow Values with Horse Creek and Brushy Creek Water Quality Data and Florida Class III Standards

Parameter	Units	NPDES min	NPDES max	Horse Creek range	Brushy Creek range	Class III Water Quality Standard, F.A.C. 62-302
pH	Std. Units	6.8	8.2	5.04 – 7.42	5.4 – 7.07	6 - 8.5
Conductivity	µmhos/cm	300	500	50 – 276	47 – 388	Greater of 50% above background or 1275
Temperature	˚C	18	28	9.2 – 28.2	18.8 – 29.8	ns
Dissolved Oxygen	mg/L	5	8	2.7 – 8.3	1.6 – 5.9	> 5.0
TSS	mg/L	1	10	1 – 15	1 – 29	ns
NVSS	mg/L	1	5	1 – 7	1 – 19	ns
Total P	mg/L	0.4	1	0.17 – 1.32	0.26 – 1.05	ns
Total N	mg/L	0.6	1.3	0.45 – 5.02	1.22 – 3.49	ns
Sulfate	mg/L	40	150	2 – 54	2 – 76	ns
Chlorophyll a	mg/L	2	8	1 – 6	1 – 16	ns
Fluoride	mg/L	0.1	0.3	0.14 – 0.62	0.03 – 0.53	< 10.0

Note:
ns = no established standard

Sources: IMC, 2002, FDEP, 2002.

Table 4.6-3 - Reagent Consumption Projected

Regent	Typical Usage lb/ton concentrate	Typical PPM Concentration (in recirculated water)
Fuel Oil	3.8	Trace
Sulfuric Acid	6.9	About 300 (as sulfate)
Fatty Acid	6.7	Trace
Diesel Oil	0.11	Trace
Ammonia	(Use discontinued, now using soda ash)	
Soda Ash	4.8	0
Amine	1.1	0
Ferrosilicon Powder	0.8	Insoluable
Magnetite Powder	10.4	Insoluable

Source: IMC, 2002.

Table 4.6-4 - IMC Mine's Clay Process Water Quality (1995-2000)

Parameter	Units	Minimum	Mean	Maximum	Count
pH	Std Units	7.1	7.89	9.33	28
Conductance	µmhos/cm	342	586.8	1010	26
Temperature	˚C	16.4	25.6	34.2	26
Dissolved Oxygen	mg/L	1.7	6.8	11.7	5
Turbidity	NTU	3.7	44.6	157	28
Cyanide	mg/L	0.02	0.027	0.03	6
Aluminum	mg/L	0.1	1.8	8.2	28
Antimony	mg/L	0.001	0.008	0.04	7
Arsenic	mg/L	0.002	0.005	0.01	9
Barium	mg/L	0.01	0.043	0.1	9
Beryllium	mg/L	0.00005	0.001	0.01	8
Cadmium	mg/L	0.0001	0	0.4	9
Calcium	mg/L	24.3	39.3	54.8	19
Chromium	mg/L	0.001	0.007	0.024	9
Cobalt	mg/L	0.01	0.01	0.01	1
Copper	mg/L	0.005	0.018	0.05	11
Iron	mg/L	0.01	0.34	1.3	28
Lead	mg/L	0.001	0.003	0.01	9
Manganese	mg/L	0.005	0.014	0.049	12
Magnesium	mg/L	10.3	14.9	40	21
Mercury	mg/L	0.0002	0.001	0.002	7
Nickel	mg/L	0.005	0.006	0.01	8
Potassium	mg/L	0.94	2.1	4	19
Selenium	mg/L	0.005	0.007	0.02	9
Silver	mg/L	0.005	0.006	0.01	9
Sodium	mg/L	37	62.7	133	16
Thallium	mg/L	0.001	0.003	0.02	8
Vanadium	mg/L	0.012	0.012	0.012	1
Zinc	mg/L	0.005	0.01	0.022	11
NOX	mg/L	0.02	0.07	0.77	27
Nitrate	mg/L	0.02	0.02	0.04	9
Nitrite	mg/L	0.02	0.02	0.03	6
TKN	mg/L	0.4	1	3.6	20
Total N	mg/L	0.43	0.8	1.02	9
Ammonia	mg/L	0.1	0.1	0.1	1
Total P	mg/L	0.56	2.8	8.53	21
Ortho-Phosphorus	mg/L	0.3	1.2	2.49	13
Gross Alpha	pCi/L	5.2	18	39.2	12
Gross Beta	pCi/L	2.2	10.6	25.2	7
Radium-226	pCi/L	0.5	2.5	8.2	20
Radium-228	pCi/L	0	0.4	2.3	13
TDS	mg/L	205	372	680	27
Chloride	mg/L	9.7	15.4	61.9	27
Silica	mg/L	1	3.2	7.2	14
Fluoride	mg/L	1.3	2.5	9.7	28
Sulfate	mg/L	30	160.4	709.3	26
Hardness	mg/L $CaCO_3$	120	156.4	184	14
Alkalinity	mg/L $CaCO_3$	106	132.2	198	19
TSS	mg/L	1	27.6	62	16
NVSS	mg/L	1	19.7	42	9
TOC	mg/L	5	17.8	31	16
Color	PCU	10	33.7	100	23
Surfactants	mg/L	0.02	0.03	0.06	10
Oil and Grease	mg/L	0.5	0.7	1.2	6
TRPH	mg/L	0.5	0.8	1.5	7
BOD	mg/L	2	4.6	17	17
COD	mg/L	28	39.5	66	11
Odor	TU	0	6.1	25	7

Nine clay water samples were taken during this period for drinking water volatiles analysis.
All analyses were below the method detection (and drinking water standards) limits.

Source: IMC, 2002.

Table 4.6-5 - IMC Mine's Tailings Process Water Quality (1995 - 2000)

Parameter	Units	Minimum	Mean	Maximum	Count
pH	Std Units	7.04	7.62	8.25	21
Conductance	µmhos/cm	345	663	1122	21
Temperature	˚C	15.3	26.6	34.3	21
Turbidity	mg/L	10.3	71.1	391	21
Dissolved Oxygen	NTU	0.9	3.6	8.2	3
Gross Alpha	pCi/L	3.7	26.4	61	5
Radium 226	pCi/L	1	2.9	13.5	19
Radium 228	pCi/L	0	0.6	2.5	9
Gross Beta	pCi/L	3.9	14	25.6	3
Aluminum	mg/L	0.1	2.68	22	21
Antimony	mg/L	0.001	0.001	0.001	1
Arsenic	mg/L	0.005	0.01	0.01	3
Barium	mg/L	0.015	0.02	0.03	3
Beryllium	mg/L	0.00025	0.005	0.01	2
Cadmium	mg/L	0.0001	0.003	0.01	3
Calcium	mg/L	22.8	34.4	54.1	20
Chromium	mg/L	0.004	0.01	0.01	3
Cobalt	mg/L	0.01	0.01	0.01	1
Copper	mg/L	0.005	0.02	0.05	4
Iron	mg/L	0.1	0.49	2.5	21
Lead	mg/L	0.002	0	0.01	3
Magnesium	mg/L	8.9	14.3	24.7	21
Manganese	mg/L	0.01	0.02	0.026	4
Mercury	mg/L	0.0002	0	0.0002	1
Nickel	mg/L	0.005	0.01	0.01	2
Potassium	mg/L	0.98	2.21	4.7	20
Selenium	mg/L	0.005	0.01	0.02	3
Silver	mg/L	0.005	0.01	0.01	2
Sodium	mg/L	44.3	95.7	150	11
Thallium	mg/L	0.001	0.01	0.02	2
Vanadium	mg/L	0.013	0.01	0.013	1
Zinc	mg/L	0.008	0.01	0.015	4
NOX	mg/L	0.02	0.07	0.66	20
Nitrate	mg/L	0.02	0.04	0.06	3
Nitrite	mg/L	0.02	0.02	0.02	1
TKN	mg/L	0.06	1.09	2.7	20
Total Nitrogen	mg/L	0.08	0.64	0.99	3
Total P	mg/L	0.73	3.45	20	21
Ortho-Phosphorus	mg/L	0.28	0.78	1.35	13
Chloride	mg/L	10	15.14	49.9	21
Color	PCU	15	48.65	100	20
Fluoride	mg/L	1.2	2.68	7.61	21
Odor	TU	4	4	4	1
Sulfate	mg/L	14	124.7	471.4	21
Surfactants	mg/L	0.02	0.03	0.05	3
Silica	mg/L	1.57	5.4	11	14
Hardness	mg/L $CaCO_3$	94	148.2	236.8	15
Alkalinity	mg/L $CaCO_3$	147	212.2	321	20
TDS	mg/L	224	433	672	21
TSS	mg/L	6	49.6	232	17
NVSS	mg/L	2	28.9	72	9
TOC	mg/L	2.8	22.5	43	14
Oil and Grease	mg/L	0.5	1.36	2.6	7
TRPH	mg/L	0.5	0.88	1.5	8
BOD	mg/L	3	11.7	34	16
COD	mg/L	29	55.8	110	11

Each mine' s tailings discharge is tested annually for a suite of 32 volatile compounds.
None of these analytes have been detected above the method detection limit during this period.

Source: IMC, 2002.

Table 4.7-1 - Lateral Seepage Characteristics for Ona Mine Site

Basin	Pre-Mining Drainage Area (acres)	Pre-Mining Groundwater Contribution (in/yr)	Post-Reclamation Groundwater Contribution (in/yr)
Brady Branch	1,973	4.6	4.5
Upper Brushy	2,833	4.5	4.4
Total Brushy	7,264	3.9	5.5
Hickory Creek	1,314	4	1.5
Horse Creek	3,239	10	8.6
Horse Creek Trib.	286	10.3	11.1
Oak Creek Tributary	645	4.7	8.5
Total Oak Creek	4643	3.5	6.2

Source: IMC, 2002.

Table 4.8-1 - Comparison of Pre-Mining and Post-Mining Topography

	Pre-Mining	%	Post-reclamation	%
Lowest Elevation (LE) feet	67'		67'	
Highest Elevation feet	132'		150'	
Acres and Percent 0-10 ft. above Base Elev. (BE*)	437.3	2%	394.4	2%
Acres and Percent 10-20 ft. above BE	5,775.4	28%	5,351.3	26%
Acres and Percent 20-30 ft. above BE	6,040.1	29%	4,442.7	21%
Acres and Percent 30-40 ft. above BE	4,978.3	24%	4,077.1	20%
Acres and Percent more than 40ft. above BE	3,444.4	17%	6,410.0	31%
Total:	20,675.5	100%	20,675.5	100%

* = BE is nearest 10ft. Contour to LE
Source: IMC, 2002.

Table 4.8-2 - Comparison of Agricultural Yields per Acre

Crop Type	% Suitable (1)	Native Hardee Soils Yield	Reclaimed Settling Areas
Oranges	94	350-500 boxes	428 (2)
Grapefruit	49	350-700 boxes	NS (2)
Cabbage	41	200-400 crates	450 crates
Cucumbers	13	6 tons	15-19 tons
Tomatoes	15	7-8 tons	17-18 tons
Watermelons	15	8-10 tons	17-38 tons
Forage Crops	95	0.75-5 tons	3-15 tons

Notes:
(1) = Percent of Hardee County soil types suitable for production.

(2) = Not studied, although IMC and Estech commercially produce citrus on reclaimed settling areas, and numerous other landowners grow citrus on reclaimed overburden
Source: IMC, 2002.

Table 4.8-3 - Comparison of Soil Chemical Properties

Soil Properties	Units	Native Hardee Soils	Phosphatic Clay
pH	Std Units	3.6 - 8.4	7.3 - 7.6
TKN	%	N/A	0.1
Total phosphorus	%	N/A	3.5
Organic carbon	%	0.6 - 3.85	1.4
Extractable phosphorus	mg/L	N/A	473
Extractable potassium	mg/L	0 - 101	366
Extractable calcium	mg/L	20 - 1,400	6,220
Extractable magnesium	mg/L	10 - 3,400	2,929
Saturated hydraulic conductivity	cm/hr	0.0 - 79.5	0.04 - 1.12
Field capacity	%	1.0 - 52.0	63.0
Wilting point	%	N/A	34.0
Clay (< 2 Fm)	%	0.3 - 33.4	41 - 79
Apatite	%	N/A	42.0

Source: IMC, 2002.

Table 4.10-1 Summary of PM_{10} Monitoring Data Collected in Polk County from 1991 to 2000.

Station ID	City	Monitor Location	Year	Number of Observations	Percent Observations	Reported Concentration (mg/m^3)		
						Highest 24-Hour	Second Highest 24-Hour	Annual
12-105-0010	Mulberry	Anderson & Pinecrest Road	2000	54	84	34	30	21*
12-105-0010	Mulberry	Anderson & Pinecrest Road	2000	45	74	127	121	27*
12-105-2006	Mulberry	NW 4th Circle	2000	277	76	46	45	23
12-105-0010	Mulberry	Anderson & Pinecrest Road	1999	53	84	45	42	22*
12-105-2006	Mulberry	NW 4th Circle	1999	326	89	50	50	22
12-105-0010	Mulberry	Anderson & Pinecrest Road	1998	58	89	54	48	24
12-105-2006	Mulberry	NW 4th Circle	1998	317	87	108	91	25
2860-006-F02	Mulberry	Anderson & Pinecrest Road	1997	149	N/R	40	36	25
3680-010-F02	Mulberry	NW 4th Circle	1997	31	N/R	41	36	20
0120-001-F01	Auburndale	300 E. Bridgers Av.	1996	18	N/R	34	34	20
2160-007-F01	Lakeland	1501 W. Bella Vista St.	1996	21	N/R	32	26	17
2860-006-F02	Mulberry	Mulberry High School	1996	21	N/R	36	28	21
3680-010-F02	Mulberry	Anderson & Pinecrest Road	1996	61	N/R	75	45	22
0120-001-F01	Auburndale	300 E. Bridgers Av.	1995	58	N/R	47	40	18
2160-007-F01	Lakeland	1501 W. Bella Vista St.	1995	54	N/R	40	36	16
2860-006-F02	Mulberry	Mulberry High School	1995	56	N/R	38	35	19
3680-010-F02	Mulberry	Anderson & Pinecrest Road	1995	59	N/R	38	36	20
3680-037-J02	Homeland	S. End of Old Ft. Mead Rd.	1992	46	N/R	70	44	20
3680-037-J09	Homeland	S. End of Old Ft. Mead Rd.	1992	42	N/R	60	42	20
3680-035-J01	Polk Co.	1 mi S. of SR 630 on SR 37	1991	26	N/R	43	34	18
3680-036-J01	Polk Co.	2 mi S. of SR 630 on SR 37	1991	30	N/R	48	45	19
3680-037-J02	Homeland	S. End of Old Ft. Mead Rd.	1991	13	N/R	38	24	17

Note:

* = Indicates that the mean does not satisfy summary criteria or that exceptional event data (forest fires) affected measurements at the site that is not included in the summary calculations.

Source: DEP, 2000, 1999 1998, 1997, 1996, 1995, 1992, 1991.

Table 4.12-1 Economic Loss from Agricultural Land Use Conversion

Agricultural Land Value Estimates for Ona Mine Site

Type of Land	Ona Mine Acreage	Average Value Per Acre in Southwest Florida (1)	Value of Ona Mine Acreage
Improved Pasture	7,006.5	$1,490	$10,439,685
Unimproved / Woodland	512.7	$1,113	$570,635
Field Crops	93.4	$2,150	$200,810
Citrus Groves	209.2	$5,802	$1,213,778
Subtotals	7,821.8	n/a	**$12,424,909**

Agricultural Product Value Estimates for Ona Mine Site

Type of Product	Number of Cows or Acres Harvested in Florida (2)	Crop Value in Florida (2)	Average Value Per Acre in Florida	Value of Ona Mine Acreage Products
Cattle	1,017,000	$293,327,000	$288.42	$2,168,716
Field Crops	995,300	$780,862,000	$784.55	$73,277
Citrus	785,900	$974,469,000	$1,239.94	$259,395
Subtotals	2,798,200	$2,048,658,000	n/a	**$2,501,389**

Notes:

To accommodate worse-case scenarios the irrigated field crop value was used for all field crop acreage; and the woodland pasture acreage was combined with the unimproved pasture acreage (there was no category for woodland pasture in the information source).

Sources:

1) Florida Food and Resource Economics, 2002.
2) Florida Agricultural Facts, 2002.

Table 4.12-2 - Projected Link LOS Analysis Peak Hour Directional Volumes (vph)

Roadway Segments	Existing Traffic	Annual Growth Rate	Projected 2008 Traffic	Estimated Ona Mine Traffic	2008 Total Projected Traffic	Projected LOS
Duette Road f. SR 64 to SR 62	50(1)	6.91%(3)	85	22	107	C
CR 663 f. Proj. Ent. to CR 664	62(2)	29.52%	227	94	321	C
CR 663 f. CR 664 to CR 630	72(2)	20.56%	205	82	287	C
CR 630 f. CR 663 to SR 37	208(2)	4.41%	291	51	342	C
SR 37 f. CR 630 to CR 640	239(2)	6.91%	388	51	439	B

(1) - Collected in 1998;
(2) - Collected in 1999;
(3) - Used the growth rate from SR 37

Notes:
A portion of the CR 663 segment is currently a dirt road. Therefore, count information was not available.
The count information along the paved segment of CR 663 was utilized.
Level of Service (LOS) - Based on average through-vehicle travel speed for the street segment.
Free-flow Speed (FFS - Average speed of traffic stream when other vehicles and other intersection traffic control factors do not have an influence on drivers' speed choice.
LOS A - Free flow operations at average travel speeds (90% of FFS for street class)
LOS B - Reasonable unimpeded operations at average travel speeds (70% of FFS for street class)
LOS C - Stable operations, maneuvering may be more restricted than Level B (50% of FFS for street class)
LOS D - Small increases in flow may cause substantial increases in delay and decreases in travel speed (40% of FFS for street class)
LOS E - Significant delays (33% or less of FFS for street class)
LOS F - Extremely low speeds, high delays, high volumes, and extensive queuing (33% or less of FFS for street class)

Source: IMC, 2002; TRB, 2000.

Table 4.18-1 IMC Ona Energy Requirements

Phase	Demand	Ona Daily Use	Description
Phase I	15 MW	250 MWH	Mine Ona reserves with one to two draglines, pump to Fort Green plant
Phase II	35 MW	600 MWH	Mine Ona reserves with three to five draglines, pump to Fort Green plant
Phase III	65 MW	1,100 MWH	Three to five draglines pump to Fort Green, start new Ona plant
Phase IV	75 MW	1,250 MWH	Fort Green curtailment, Ona reserves mined to Ona plant

MW = megawatt

MWH = megawatt hour

Table 4.26-1 Peace River Basin Summary of Land Cover for 1975

Level 3	Count	Acres
100	66	3,600.5
110	370	51,106.8
120	70	12,843.7
130	59	2,729.9
140	230	8,873.4
150	83	3,516.1
160	180	78,100.4
170	15	134.1
180	18	1,022.8
190	81	4,564.0
210	1828	355,148.9
214	1	7.3
220	976	194,649.2
230	3	51.7
240	6	162.6
250	1	38.5
260	3	32.7
310	1923	170,217.6
320	1950	89,283.5
321	6	2,155.5
330	250	7,902.5
410	1077	41,318.8
411	1604	61,026.0
412	1	4.9
420	223	2,419.5
427	2	29.3
434	2494	36,296.6
440	78	2,896.9
441	2	1,545.5
510	67	3,770.5
520	364	30,043.6
530	353	2,895.0
540	32	9,159.2
610	20	50.8
611	38	223.7
612	107	2,498.6
615	4617	51,519.2
616	10	98.1
620	57	371.0
621	625	2,923.8
630	1080	135,478.6
640	927	24,752.4
641	13913	72,853.4
642	200	2,212.1
643	3944	23,190.8
644	906	2,001.3
651	14	180.6
652	9	119.6
653	101	90.9
720	1	94.8
740	10	260.0
760	25	1,401.5
800	18	3,125.8
810	20	727.4
820	1	0.1
830	10	546.9
	Total	1,502,268.8

Level 2	Count	Acres
100	66	3,600.5
110	370	51,106.8
120	70	12,843.7
130	59	2,729.9
140	230	8,873.4
150	83	3,516.1
160	180	78,100.4
170	15	134.1
180	18	1,022.8
190	81	4,564.0
210	1829	355,156.2
220	976	194,649.2
230	3	51.7
240	6	162.6
250	1	38.5
260	3	32.7
310	1923	170,217.6
320	1956	91,439.0
330	250	7,902.5
410	2682	102,349.8
420	225	2,448.8
430	2494	36,296.6
440	80	4,442.5
510	67	3,770.5
520	364	30,043.6
530	353	2,895.0
540	32	9,159.2
610	4792	54,390.4
620	682	3,294.8
630	1080	135,478.6
640	19890	125,009.8
650	124	391.2
720	1	94.8
740	10	260.0
760	25	1,401.5
800	18	3,125.8
810	20	727.4
820	1	0.1
830	10	546.9
	Total	1,502,268.8

Level 1	Count	Acres
100	1172	166,491.6
200	2818	550,090.8
300	4129	269,559.1
400	5481	145,537.6
500	816	45,868.4
600	26568	318,564.8
700	36	1,756.4
800	49	4,400.2
	Total	1,502,268.8

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-2 Peace River Basin Summary of Land Cover for 2000

Level 3	Count	Acres
110	1120	31,253.5
120	1227	46,223.1
130	384	9,626.0
140	1225	11,388.2
150	212	6,700.4
160	2717	73,909.3
170	230	3,673.8
175	1	0.8
180	210	5,976.1
190	543	21,551.0
210	4157	421,880.1
211	66	9,637.6
213	3	42.3
214	203	17,042.9
220	1928	207,615.3
221	20	809.4
230	35	1,329.2
240	99	1,509.4
250	22	1,294.5
255	13	489.2
260	824	21,754.6
310	397	5,497.1
311	60	97.3
312	41	116.9
313	16	327.0
314	6	23.5
320	2208	102,789.9
321	14	2,697.3
329	39	1,095.9
330	247	3,783.7
400	194	1,767.9
410	429	5,279.5
411	1684	72,586.1
412	1	4.9
420	570	5,449.5
421	2	29.4
422	203	324.0
424	66	304.3
427	2	29.3
430	862	5,378.4
434	2720	51,321.2
436	6	5.5
438	145	565.4
440	182	2,570.8
441	27	2,121.5
470	2	12.7
500	53	278.2
510	307	6,644.5
520	1168	35,531.9
523	4	102.6
524	3	9.8
530	6040	10,580.6
540	34	9,095.4
560	1	12.1
600	1	11.7
610	169	548.4

Level 2	Count	Acres
110	1120	31,253.5
120	1227	46,223.1
130	384	9,626.0
140	1225	11,388.2
150	212	6,700.4
160	2717	73,909.3
170	231	3,674.6
180	210	5,976.1
190	543	21,551.0
210	4429	448,602.9
220	1948	208,424.7
230	35	1,329.2
240	99	1,509.4
250	35	1,783.7
260	824	21,754.6
310	520	6,061.8
320	2261	106,583.1
330	247	3,783.7
400	194	1,767.9
410	2114	77,870.6
420	843	6,136.5
430	3733	57,270.5
440	209	4,692.3
470	2	12.7
500	53	278.2
510	307	6,644.5
520	1175	35,644.3
530	6040	10,580.6
540	34	9,095.4
560	1	12.1
600	1	11.7
610	4761	107,435.9
620	1405	14,804.3
630	946	9,390.8
640	20080	105,920.8
650	121	402.0
720	5	5.7
740	129	1,613.6
810	477	28,658.5
820	11	45.3
830	228	13,842.4
	Total	1,502,272.1

Level 1	Count	Acres
100	7869	210,302.2
200	7370	683,404.5
300	3028	116,428.6
400	7095	147,750.6
500	7610	62,255.1
600	27314	237,965.5
700	134	1,619.3
800	716	42,546.3
	Total	1,502,272.1

Table 4.26-2 Peace River Basin Summary of Land Cover for 2000

Level 3	Count	Acres
611	51	701.2
612	132	2,915.6
615	4369	102,152.8
616	2	1,005.5
617	38	112.4
620	383	4,630.8
621	862	9,464.5
628	86	276.3
629	74	432.7
630	879	8,861.6
631	67	529.2
640	799	6,165.6
641	14126	72,470.3
642	203	2,215.5
643	3973	23,240.2
644	979	1,829.3
651	14	177.8
652	7	136.9
653	100	87.3
720	5	5.7
740	127	1,609.1
741	2	4.4
810	446	28,494.2
812	17	127.1
814	14	37.2
820	11	45.3
830	165	2,565.8
831	63	11,276.6
	Total	1,502,272.1

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source : ECT, 2002.

Table 4.26-3 Peace River Basin Summary of Land Cover for 2025

Level 3	Count	Acres
100	752	147,926.3
110	1598	135,166.2
111	1	0.4
120	513	1,676.2
130	377	20,422.5
140	970	38,969.3
148	1	5.2
150	122	9,221.5
160	159	33,265.6
170	50	308.9
175	1	0.8
180	112	945.0
190	119	2,892.9
210	2169	341,687.7
211	353	33,408.2
212	5	98.8
213	118	2,412.7
214	159	14,382.0
215	2	25.9
220	1096	137,321.1
221	23	1,616.0
230	24	1,276.5
240	52	777.1
241	1	5.0
250	11	860.3
255	11	343.3
260	448	12,739.4
310	290	6,127.2
311	60	97.3
312	31	88.0
313	8	318.8
314	6	23.5
320	1637	79,005.1
321	177	5,095.9
329	73	1,088.6
330	112	5,343.8
400	43	1,880.7
410	280	7,964.7
411	1327	56,507.2
412	1	4.9
413	4	75.3
414	4	126.0
419	1	48.9
420	376	5,563.0
421	13	598.8
422	192	319.6
424	51	246.7

Level 2	Count	Acres
100	752	147,926.3
110	1599	135,166.7
120	513	1,676.2
130	377	20,422.5
140	971	38,974.7
150	122	9,221.6
160	159	33,265.6
170	51	309.6
180	112	945.0
190	119	2,892.8
210	2806	392,014.6
220	1119	138,936.8
230	24	1,276.5
240	53	782.1
250	22	1,203.6
260	448	12,739.4
310	395	6,654.8
320	1887	85,189.5
330	112	5,343.8
400	43	1,880.7
410	1617	64,726.8
420	917	9,091.0
430	2626	49,572.7
440	95	4,914.3
470	1	12.7
500	20	283.8
510	330	4,311.6
520	693	37,943.8
530	2843	6,112.9
540	26	9,004.7
560	1	12.1
600	2	7.4
610	4324	104,226.6
620	1202	15,874.8
630	733	11,163.3
640	18883	109,099.0
650	118	395.8
720	5	3.9
740	60	472.2
810	253	26,129.8
820	3	7.5
830	102	12,077.9
	Total	1,502,267.3

Level 1	Count	Acres
100	4775	390,801.1
200	4472	546,952.9
300	2394	97,188.0
400	5299	130,198.3
500	3913	57,668.9
600	25262	240,766.8
700	65	476.1
800	358	38,215.2
	Total	1,502,267.3

Table 4.26-3 Peace River Basin Summary of Land Cover for 2025

Level 3	Count	Acres
425	102	651.4
427	183	1,711.5
430	297	8,920.3
432	11	376.0
434	2090	38,829.4
436	1	27.6
438	195	1,256.6
439	32	162.9
440	69	2,150.0
441	26	2,764.3
470	1	12.7
500	20	283.8
510	211	4,256.8
511	27	24.0
512	92	30.9
520	657	36,238.9
521	1	176.5
522	2	558.7
523	20	904.7
524	13	64.9
530	2828	6,107.9
534	15	5.0
540	26	9,004.7
560	1	12.1
600	2	7.4
610	143	2,061.4
611	73	988.7
612	132	2,915.6
613	9	16.6
615	3684	92,084.1
616	2	1,005.5
617	281	5,155.0
620	224	6,123.6
621	834	9,039.8
624	1	7.7
628	76	273.9
629	67	429.8
630	671	10,432.4
631	62	730.8
640	598	9,608.7
641	13094	72,056.1
642	203	2,215.5
643	3997	22,720.7
644	854	1,804.6
646	137	693.6
651	14	177.8

Table 4.26-3 Peace River Basin Summary of Land Cover for 2025

Level 3	Count	Acres
652	7	136.9
653	97	81.1
720	5	3.9
740	47	466.2
741	2	4.4
743	11	1.6
810	224	26,020.5
812	13	52.5
814	16	56.9
820	1	0.7
821	1	6.8
822	1	0.0
830	82	742.2
831	10	11,272.6
832	10	63.0
	Total	1,502,268.4

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-4 Comparison of Predicted and Actual Mining Activites Within the Peace River Basin

Category	USEPA Projection[1]	Actual (2000)
Acres Mined (1977-2000)	111,000	81,400
Acres Reclaimed (1977-2000)	111,000	90,935
Wetlands Reclaimed (acres)	0	>7,500
Average Water Demand	219-352 mgd	<100 mgd

1Source: USEPA, Areawide EIS, 1978

Table 4.26-5 Summary of Estimated Water Withdrawal (mgd) in the Region by Source, Category, and County, 1975

County	Agricutural	Phosphate Plants	Industrial Commercial	Phosphate Mining	Other Mining Dewatering	Public Supply	Domestic Self-Supply	Recreational Aesthetic	County Total
Groundwater									
CHARLOTTE	18.56	0.00	0.28	0.00	--	4.62	--	0.05	23.51
DESOTO	106.07	0.00	0.31	0.00	--	2.58	--	0.05	109.01
HARDEE	186.40	0.00	1.36	0.00	--	2.61	--	0.05	190.42
HILLSBOROUGH	60.88	7.19	14.35	7.27	--	15.33	--	0.32	105.34
MANATEE	59.06	5.80	18.30	0.00	--	0.00	--	0.50	83.66
POLK	148.77	81.50	51.01	159.00	--	43.43	--	1.60	485.31
SARASOTA	30.52	0.00	1.54	0.00	--	21.14	--	1.20	54.40
TOTAL	610.26	94.49	87.15	166.27	--	89.71	--	3.77	1051.65
% of Regional Tot	58.03	8.98	8.29	15.81	--	8.53	--	0.36	100.00
Surface Water									
CHARLOTTE	0.00	0.00	0.00	0.00	--	2.24	--	0.00	2.24
DESOTO	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00
HARDEE	0.00	0.00	0.00	0.00	--	0.00	--	0.00	0.00
HILLSBOROUGH	0.00	12.10	0.00	0.00	--	72.06	--	0.00	84.16
MANATEE	0.00	0.00	0.00	0.00	--	28.80	--	0.00	28.80
POLK	0.00	0.00	254.78	0.00	--	0.00	--	0.00	254.78
SARASOTA	0.00	0.00	0.00	0.00	--	1.10	--	0.00	1.10
TOTAL	0.00	12.10	254.78	0.00	--	104.20	--	0.00	371.08
% of Regional Tot	0.00	3.26	68.66	0.00	--	28.08	--	0.00	100.00
Total Groundwater and Surface Water									
CHARLOTTE	18.56	0.00	0.28	0.00	--	6.86	--	0.05	25.75
DESOTO	106.07	0.00	0.31	0.00	--	2.58	--	0.05	109.01
HARDEE	186.40	0.00	1.36	0.00	--	2.61	--	0.05	190.42
HILLSBOROUGH	60.88	19.29	14.35	7.27	--	87.39	--	0.32	189.50
MANATEE	59.06	5.80	18.30	0.00	--	28.80	--	0.50	112.46
POLK	148.77	81.50	305.79	159.00	--	43.43	--	1.60	740.09
SARASOTA	30.52	0.00	1.54	0.00	--	22.24	--	1.20	55.50
TOTAL	610.26	0.00	341.93	0.00	--	193.91	--	3.77	1422.73
% of Regional Tot	42.89	0.00	24.03	0.00	--	13.63	--	0.26	100.00

Note: -- No Data

Source: EPA, 1978.

Table 4.26-6 Summary of Estimated Water Withdrawal (mgd) in the Region by Source, Category, and County, 1999

County	Agricutural	Phosphate Plants	Industrial Commercial	Phosphate Mining	Mining Dewatering	Public Supply	Domestic Self-Supply	Recreational Aesthetic	County Total
Groundwater									
CHARLOTTE	15.48	0.00	0.02	0.00	0.00	3.34	3.49	0.72	23.05
DESOTO	75.13	0.00	0.04	0.00	0.01	2.54	1.74	0.22	79.68
HARDEE	62.60	0.00	0.12	4.02	0.00	1.69	0.49	0.16	69.09
HILLSBOROUGH	68.25	9.20	0.48	0.52	0.08	83.91	5.65	7.48	175.56
MANATEE	91.00	0.09	0.15	4.76	0.00	13.10	0.19	2.53	111.81
POLK	117.10	16.57	22.25	24.58	3.05	69.05	10.37	7.92	270.89
SARASOTA	5.41	0.00	0.29	0.00	0.00	23.85	0.99	4.64	35.17
TOTAL	434.97	25.86	23.34	33.88	3.14	197.47	22.91	23.67	765.25
% of Regional Tot	56.84	3.38	3.05	4.43	0.41	25.80	2.99	3.09	100.00
Surface Water									
CHARLOTTE	2.04	0.00	0.00	0.00	1.08	3.57	0.00	2.55	9.23
DESOTO	0.19	0.00	0.00	0.00	0.19	10.63	0.00	0.14	11.15
HARDEE	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
HILLSBOROUGH	3.28	0.00	4.56	0.00	1.04	86.67	0.00	4.26	99.79
MANATEE	1.15	0.00	0.00	0.00	0.81	29.40	0.00	0.94	32.29
POLK	4.00	0.00	2.16	0.00	12.81	0.15	0.00	2.12	21.24
SARASOTA	0.68	0.00	0.01	0.00	1.12	1.50	0.00	3.24	6.55
TOTAL	11.89	0.00	6.72	0.00	17.06	131.91	0.00	13.24	180.82
% of Regional Tot	6.57	0.00	3.72	0.00	9.43	72.95	0.00	7.32	100.00
Total Ground Water and Surface Water									
CHARLOTTE	17.51	0.00	0.02	0.00	1.08	6.91	3.49	3.27	32.28
DESOTO	75.33	0.00	0.04	0.00	0.20	13.17	1.74	0.36	90.83
HARDEE	63.16	0.00	0.12	4.02	0.00	1.69	0.49	0.16	69.65
HILLSBOROUGH	71.52	9.20	5.04	0.52	1.12	170.57	5.65	11.74	275.36
MANATEE	92.15	0.09	0.15	4.76	0.81	42.49	0.19	3.47	144.11
POLK	121.10	16.57	24.41	24.58	15.86	69.20	10.37	10.04	292.12
SARASOTA	6.09	0.00	0.29	0.00	1.12	25.35	0.99	7.88	41.72
TOTAL	446.86	25.86	30.07	33.88	20.20	329.38	22.91	36.91	946.06
% of Regional Tot	47.23	2.73	3.18	3.58	2.13	34.82	2.42	3.90	100.00

Source: SWFWMD, 2001(a)

Table 4.26-7 Summary of Estimated Change in Water Withdrawal (mgd) in the Region by Source, Category, and County, 1975 to 1999

County	Agricultural	Phosphate Plants	Industrial Commercial	Phosphate Mining	Mining Dewatering	Public Supply	Domestic Self-Supply	Recreational Aesthetic	County Total
Groundwater									
CHARLOTTE	-3.08	0.00	-0.26	0.00	n/a	-1.28	n/a	0.67	-3.95
DESOTO	-30.94	0.00	-0.28	0.00	n/a	-0.04	n/a	0.17	-31.08
HARDEE	-123.80	0.00	-1.24	4.02	n/a	-0.92	n/a	0.11	-121.82
HILLSBOROUGH	7.37	2.01	-13.87	-6.75	n/a	68.58	n/a	7.16	64.50
MANATEE	31.94	-5.71	-18.15	4.76	n/a	13.10	n/a	2.03	27.96
POLK	-31.68	-64.93	-28.76	-134.42	n/a	25.62	n/a	6.32	-227.84
SARASOTA	-25.11	0.00	-1.25	0.00	n/a	2.71	n/a	3.44	-20.22
TOTAL	-175.29	-68.63	-63.81	-132.39	n/a	107.76	n/a	19.90	-312.45
% change of Categor	-28.72	-72.63	-73.21	-79.63	n/a	120.12	n/a	527.96	-29.71
Surface Water									
CHARLOTTE	2.04	0.00	0.00	0.00	n/a	1.33	n/a	2.55	5.91
DESOTO	0.19	0.00	0.00	0.00	n/a	10.63	n/a	0.14	10.96
HARDEE	0.56	0.00	0.00	0.00	n/a	0.00	n/a	0.00	0.56
HILLSBOROUGH	3.28	-12.10	4.56	0.00	n/a	14.61	n/a	4.26	14.59
MANATEE	1.15	0.00	0.00	0.00	n/a	0.59	n/a	0.94	2.68
POLK	4.00	0.00	-252.63	0.00	n/a	0.15	n/a	2.12	-246.35
SARASOTA	0.68	0.00	0.01	0.00	n/a	0.40	n/a	3.24	4.32
TOTAL	11.89	-12.10	-248.06	0.00	n/a	27.71	n/a	13.24	-207.32
% change of Categor	n/a	-100.00	-97.36	n/a	n/a	26.60	n/a	n/a	-55.87
Total Ground Water and Surface Water									
CHARLOTTE	-1.05	0.00	-0.26	0.00	n/a	0.05	n/a	3.22	1.96
DESOTO	-30.75	0.00	-0.28	0.00	n/a	10.59	n/a	0.31	-20.12
HARDEE	-123.24	0.00	-1.24	4.02	n/a	-0.92	n/a	0.11	-121.26
HILLSBOROUGH	10.64	-10.09	-9.31	-6.75	n/a	83.18	n/a	11.42	79.09
MANATEE	33.09	-5.71	-18.15	4.76	n/a	13.69	n/a	2.97	30.65
POLK	-27.67	-64.93	-281.39	-134.42	n/a	25.77	n/a	8.44	-474.20
SARASOTA	-24.43	0.00	-1.25	0.00	n/a	3.11	n/a	6.68	-15.89
TOTAL	-163.40	-80.73	-311.87	-132.39	n/a	135.47	n/a	33.14	-519.77
% of Regional Total	31.44	15.53	60.00	25.47	n/a	-26.06	n/a	-6.38	100.00

Note: n/a = Not Available

le 4.26-8 Summary of Estimated Water Withdrawal (mgd) in the Region by Category and County, 2(

County	Agricutural	Industrial, Mining, Power	Public Supply	Domestic Self-Supply	Recreational Aesthetic	County Total
CHARLOTTE	30.7	1.79	21.70	6.00	5.10	65.29
DESOTO	112	0.90	2.00	2.60	0.90	118.40
HARDEE	68.8	5.13	1.90	1.60	0.20	77.63
HILLSBOROUGH	108.6	19.55	149.60	12.90	16.20	306.85
MANATEE	128.6	9.33	46.80	1.10	3.80	189.63
POLK	136.4	91.53	94.60	9.40	11.30	343.23
SARASOTA	19	1.01	56.50	3.90	11.80	92.21
TOTAL	604.10	129.24	373.10	37.50	49.30	1193.24
% of Regional To	50.63	10.83	31.27	3.14	4.13	100.00

Note: Values are total of groundwater and surface water sources

Source: SWFWMD, 2001(b)

Table 4.26-9 Summary of Estimated Change in Water Withdrawal (mgd) in the Region by Source, Category, and County, 1999 to 2020.

County	Agricultural	Industrial, Mining, & Power	Public Supply	Domestic Self-Supply	Recreational and Aesthetic	County Total
Groundwater						
CHARLOTTE	13.19	0.69	14.79	2.51	1.83	33.01
DESOTO	36.68	0.67	-11.17	0.86	0.54	27.57
HARDEE	5.64	0.98	0.21	1.11	0.04	7.98
HILLSBOROUGH	37.08	3.67	-20.97	7.26	4.47	31.50
MANATEE	36.45	3.52	4.31	0.91	0.33	45.52
POLK	15.30	10.11	25.40	-0.97	1.26	51.11
SARASOTA	12.91	-0.41	31.15	2.91	3.92	50.49
TOTAL	157.24	19.24	43.72	14.59	12.39	247.18
% change for Catego	35.19	17.49	13.27	63.69	33.55	26.13

Table 4.26-10 Peace River Basin Summary of Land Cover Changes from 1975 to 2025

Land Cover	1975 Total Acres	1975 Adjusted Acres	1975% of Area	2000 Total Acres	2000% of Area	2000-1975 Change Acres	2000-1975 Change as %	2025 Total Acres	2025% of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	88,391.2	88,391.2	5.88	136,392.9	9.08	48,001.8	3.20	357,535.5	23.80	221,142.5	14.72	269,144.3	17.92
160	78,100.4	78,100.4	5.20	73,909.3	4.92	-4,191.1	-0.28	33,265.6	2.21	-40,643.7	-2.71	-44,834.8	-2.98
200[2]	285.4	285.4	0.02	26,376.9	1.76	26,091.5	1.74	16,001.6	1.07	-10,375.3	-0.69	15,716.1	1.05
210	355,156.2	355,156.2	23.64	448,602.9	29.86	93,446.7	6.22	392,014.6	26.09	-56,588.3	-3.77	36,858.4	2.45
220	194,649.2	194,649.2	12.96	208,424.7	13.87	13,775.5	0.92	138,936.8	9.25	-69,487.9	-4.63	-55,712.5	-3.71
300's	280,706.9	291,854.7	19.43	116,428.6	7.75	-164,278.3	-10.94	97,188.0	6.47	-19,240.6	-1.28	-183,518.8	-12.22
400's	173,041.8	200,545.9	13.35	147,750.6	9.84	-25,291.2	-1.68	130,198.3	8.67	-17,552.4	-1.17	-42,843.5	-2.85
500's	50,053.0	54,237.6	3.61	62,255.1	4.14	12,202.1	0.81	57,668.9	3.84	-4,586.2	-0.31	7,616.0	0.51
610-630	158,998.5	124,833.3	8.31	131,631.0	8.76	-27,367.5	-1.82	131,272.0	8.74	-359.0	-0.02	-27,726.5	-1.85
640-650	116,729.7	108,058.4	7.19	106,322.9	7.08	-10,406.8	-0.69	109,494.8	7.29	3,172.0	0.21	-7,234.9	-0.48
700's	1,756.4	1,756.4	0.12	1,619.3	0.11	-137.1	-0.01	476.1	0.03	-1,143.2	-0.08	-1,280.3	-0.09
800's	4,400.2	4,400.2	0.29	42,546.3	2.83	38,146.1	2.54	38,215.2	2.54	-4,331.1	-0.29	33,815.0	2.25
Totals	1,502,268.8	1,502,268.8	100.00	1,502,260.4	100.00	-8.4	0.00	1,502,267.3	100.00	6.9	0.00	-1.5	0.00

Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.
Source: ECT, 2002.

Table 4.26-11 Payne Creek Basin Summary of Land Cover for 1975

Level 3	Count	Acres
110	4	333.6
150	7	101.2
160	19	12,390.6
210	71	7,333.7
220	54	10,782.6
310	69	18,054.6
320	55	1,017.1
330	3	45.6
410	147	14,680.6
411	44	1,079.0
420	2	31.2
434	82	1,560.4
440	16	1,335.8
520	4	63.7
530	21	149.2
611	1	30.8
615	139	3,745.4
620	2	38.3
621	10	29.2
630	36	4,513.2
640	42	1,249.4
641	320	1,522.5
643	19	31.2
644	19	52.3
	Total	80,170.9

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-12 Payne Creek Basin Summary of Land Cover for 2000.

Level 3	Count	Acres
110	48	299.9
120	11	227.4
130	8	74.5
140	7	50.9
160	817	27,628.3
170	2	95.0
180	2	21.7
190	5	31.6
210	631	16,023.0
211	14	154.4
213	3	42.3
214	2	84.0
220	94	5,825.3
221	3	1.1
230	3	30.4
240	5	18.6
260	11	126.7
310	70	515.9
320	144	2,366.8
330	33	525.7
410	197	1,336.1
411	106	1,641.9
420	60	989.3
430	406	1,367.2
434	184	1,326.6
440	69	1,217.0
441	12	144.2
510	2	0.2
520	282	1,793.4
524	3	9.8
530	227	238.5
610	89	325.7
611	1	5.4
615	326	4,318.3
617	19	50.1
620	28	213.6
621	32	603.8
630	181	855.8
631	3	40.8
640	375	2,204.8
641	373	1,404.5
643	27	26.0
644	16	7.1
740	3	88.0
810	61	1,077.5
812	2	13.2
830	1	1.2
831	28	4,727.6
	Total	80,171.2

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-13 Payne Creek Basin Summary of Land Cover for 2025.

Level 3	Count	Acres
100	6	196.5
110	32	557.2
120	5	102.1
130	7	478.1
140	10	591.5
150	1	4.8
160	52	3,323.8
170	2	14.9
180	1	0.9
190	5	8.2
210	211	26,221.2
211	56	6,892.8
213	4	57.5
214	8	97.1
220	59	4,462.2
221	5	123.7
230	1	17.3
240	2	13.6
241	1	5.0
260	10	112.8
310	29	1,132.4
320	62	1,932.1
321	9	161.4
330	13	781.6
410	82	3,084.2
411	56	753.7
414	1	26.4
419	1	48.9
420	71	1,737.4
421	3	122.1
430	77	1,235.3
434	178	3,196.1
438	2	92.3
439	2	8.6
440	24	1,048.9
441	6	506.4
510	3	5.6
512	1	15.3
520	126	2,721.2
522	1	112.0
523	9	436.7
524	12	56.3
530	38	61.8
610	51	842.0
611	1	5.4
615	87	1,751.7
617	26	790.5
620	47	1,445.5
621	25	179.5
624	1	7.7
630	68	1,873.5
631	3	42.8
640	267	3,814.4
641	110	925.2
643	3	5.1
644	8	3.6
740	2	40.7
810	7	1,156.4
812	1	0.0
830	1	1.2
831	7	4,727.5
	Total	80,170.9

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT,2002.

Table 4.26-14 Horse Creek Basin Summary of Land Cover for 1975

Level 3	Count	Acres
110	3	138.0
210	221	44,699.3
220	79	9,972.5
240	2	72.1
310	402	23,311.9
320	356	16,833.4
330	5	121.0
410	57	810.5
411	336	8,771.2
420	45	388.9
434	478	6,639.2
440	3	92.3
520	29	187.0
611	1	16.6
615	775	6,801.2
620	11	103.1
621	138	414.9
630	153	24,342.6
640	50	1,170.8
641	2105	9,487.1
643	507	2,230.2
644	58	38.8
653	1	0.2
	Total	156,642.8

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

DRAFT

Table 4.26-15 Horse Creek Basin Summary of Land Cover for 2000.

Level 3	Count	Acres
110	25	1,890.7
130	1	10.6
140	3	63.7
150	1	7.9
160	152	8,295.6
170	6	109.2
180	1	37.4
190	1	8.0
210	245	53,862.1
214	28	3,809.3
220	116	11,928.9
230	6	60.5
240	2	32.0
250	1	269.4
260	40	1,634.1
310	90	1,216.5
320	401	19,091.5
330	11	88.5
410	35	577.0
411	332	10,919.3
420	60	787.0
430	21	96.3
434	423	10,964.9
440	3	92.3
510	23	76.8
520	15	240.4
530	482	268.7
610	10	53.9
611	1	48.8
615	657	14,921.5
620	12	132.0
621	224	1,315.3
630	51	280.1
640	32	615.1
641	2118	9,384.1
643	505	2,220.9
644	55	38.2
653	1	0.2
720	5	5.7
740	3	74.9
810	18	1,079.4
830	3	34.3
	Total	156,643.2

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-16 Horse Creek Basin Summary of Land Cover for 2025.

Level 3	Count	Acres
110	40	9,675.5
111	1	0.4
140	12	660.3
160	23	14,630.6
170	5	67.0
180	1	37.4
210	225	41,227.8
211	170	5,259.0
212	4	98.3
213	67	740.7
214	26	2,898.0
215	2	25.9
220	102	10,142.0
230	6	60.5
240	1	11.8
250	1	181.7
260	29	1,394.9
310	84	2,134.8
320	305	9,740.9
321	130	1,917.2
329	25	35.4
330	18	1,459.7
410	67	2,207.0
411	321	8,914.4
413	4	75.3
414	1	1.3
420	75	1,153.6
421	8	450.4
425	83	565.7
427	102	896.6
430	16	75.3
432	10	347.7
434	418	7,113.9
438	15	109.2
439	29	152.0
440	3	92.3
510	39	74.8
511	24	12.6
512	74	14.2
520	13	401.8
521	1	176.5

Table 4.26-16 Horse Creek Basin Summary of Land Cover for 2025.

Level 3	Count	Acres
523	5	176.7
530	308	131.5
534	12	3.2
610	37	822.1
611	20	251.3
613	8	15.5
615	516	12,538.4
617	130	989.5
620	43	684.7
621	224	1,293.6
630	61	255.3
640	126	1,117.1
641	1660	9,353.6
643	592	2,057.9
644	48	28.0
646	78	461.4
653	1	0.2
740	3	65.2
743	11	1.6
810	11	1,112.8
814	6	7.7
821	1	6.8
822	1	0.0
830	3	34.3
	Total	156,642.7

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-17 Joshua Creek Basin Summary of Land Cover for 1975.

Level 3	Count	Acres
100	4	104.8
110	3	350.0
140	2	352.3
160	7	8.9
210	81	39,259.9
220	37	6,193.6
310	68	11,715.1
320	105	4,855.9
330	1	9.5
410	31	641.1
411	63	1,807.6
420	1	5.5
434	93	1,426.1
520	31	309.6
530	3	1.9
615	188	1,820.0
621	4	12.0
630	21	2,551.4
640	38	758.6
641	623	3,406.2
643	301	1,441.8
644	16	189.5
800	2	228.6
	Total	77,450.0

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-18 Joshua Creek Basin Summary of Land Cover for 2000.

Level 3	Count	Acres
110	51	1,434.0
120	25	811.9
130	3	117.8
140	20	181.3
150	1	9.4
170	2	243.0
190	7	57.7
210	113	31,473.6
214	13	1,069.5
220	84	22,272.8
240	4	95.4
250	2	97.6
255	3	263.9
260	27	677.0
310	17	127.4
320	105	5,062.5
330	1	9.8
410	8	99.6
411	62	1,942.2
420	1	5.5
434	103	1,772.7
510	1	0.3
520	5	10.4
530	321	423.7
615	132	2,957.7
621	1	71.3
630	5	8.0
641	625	3,406.0
643	303	1,441.7
644	16	189.5
740	2	25.5
810	2	1,023.8
830	3	67.0
	Total	77,449.9

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-19 Joshua Creek Basin Summary of Land Cover for 2025.

Level 3	Count	Acres
100	3	980.9
110	45	18,088.2
120	2	21.5
140	21	2,261.6
170	1	46.7
210	50	23,971.6
214	6	597.6
220	34	15,321.0
240	1	23.2
255	2	160.9
260	12	472.1
310	17	127.4
320	81	4,223.9
330	1	9.8
410	6	91.8
411	35	1,252.6
434	31	511.0
520	2	5.4
530	180	299.5
615	132	2,957.7
621	1	71.3
630	5	8.0
641	625	3,406.0
643	303	1,441.7
644	16	189.5
740	1	11.5
810	2	837.0
830	2	60.4
	Total	77,449.6

Note: Refer to Appendix B for a List of the Land Use and Cover Classification System.

Source: ECT, 2002.

Table 4.26-20 Payne Creek Basin Summary of Land Cover Changes for 1975 through 2025.

Land Cover	1975 Sum Acres	1975 Adjusted Acres	1975% of Area	2000 Sum Acres	2000% of Area	2000-1975 Change Acres	2000-1975 Change as %	Count	2025 Sum Acres	2025% of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	435	435	0.5	801	1.0	366	0.5	4616	1,954	2.4	1,153	1.4	1,520	1.9
160	12,391	12,391	15.5	27,628	34.5	15,238	19.0	159	3,324	4.1	-24,304	-30.3	-9,067	-11.3
200[2]	0	0	0.0	176	0.2	176	0.2	547	149	0.2	-27	0.0	149	0.2
210	7,334	7,334	9.1	16,304	20.3	8,970	11.2	2806	33,269	41.5	16,965	21.2	25,935	32.3
220	10,783	10,783	13.4	5,826	7.3	-4,956	-6.2	1119	4,586	5.7	-1,241	-1.5	-6,197	-7.7
300's	19,117	19,319	24.1	3,408	4.3	-15,911	-19.8	2394	4,008	5.0	599	0.7	-15,312	-19.1
400's	18,687	19,279	24.0	8,022	10.0	-11,257	-14.0	5299	11,860	14.8	3,838	4.8	-7,419	-9.3
500's	213	242	0.3	2,042	2.5	1,800	2.2	3913	3,409	4.3	1,367	1.7	3,167	4.0
610-630	8,357	7,574	9.4	6,413	8.0	-1,160	-1.4	6259	6,939	8.7	525	0.7	-635	-0.8
640-650	2,855	2,815	3.5	3,642	4.5	827	1.0	19001	4,748	5.9	1,106	1.4	1,933	2.4
700's	0	0	0.0	88	0.1	88	0.1	65	41	0.1	-47	-0.1	41	0.1
800's	0	0	0.0	5,819	7.3	5,819	7.3	358	5,885	7.3	66	0.1	5,885	7.3
Total	80,171	80,171	100.0	80,171	100.0	0	0.0	Total	80,171	100.0	0	0.0	0	0.0

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Source: ECT, 2002.

Table 4.26-21 Horse Creek Basin Summary of Land Cover Changes for 1975 through 2025.

Land Cover	1975 Sum Acres	1975 Adjusted Acres	1975% of Area	2000 Sum Acres	2000% of Area	2000-1975 Change Acres	2000-1975 Change as %	2025 Sum Acres	2025% of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	138	138	0.1	2,128	1.4	1,990	1.3	10,441	6.7	8,313	5.3	10,303	6.6
160	0	0	0.0	8,296	5.3	8,296	5.3	14,631	9.3	6,335	4.0	14,631	9.3
200[2]	72	72	0.0	1,996	1.3	1,924	1.2	1,649	1.1	-347	-0.2	1,577	1.0
210	44,699	44,699	28.5	57,671	36.8	12,972	8.3	50,250	32.1	-7,422	-4.7	5,550	3.5
220	9,972	9,972	6.4	11,929	7.6	1,956	1.2	10,142	6.5	-1,787	-1.1	169	0.1
300's	40,266	42,511	27.1	20,396	13.0	-22,115	-14.1	15,288	9.8	-5,108	-3.3	-27,224	-17.4
400's	16,702	23,589	15.1	23,437	15.0	-152	-0.1	22,155	14.1	-1,282	-0.8	-1,434	-0.9
500's	187	309	0.2	586	0.4	277	0.2	991	0.6	405	0.3	682	0.4
610-630	31,678	22,754	14.5	16,752	10.7	-6,002	-3.8	16,851	10.8	99	0.1	-5,903	-3.8
640-650	12,927	12,598	8.0	12,258	7.8	-339	-0.2	13,018	8.3	760	0.5	420	0.3
700's	0	0	0.0	81	0.1	81	0.1	67	0.0	-14	0.0	67	0.0
800's	0	0	0.0	1,114	0.7	1,114	0.7	1,162	0.7	48	0.0	1,162	0.7
Total	156,643	156,643	100.0	156,643	100.0	0	0.0	156,643	100.0	-1	0.0	0	0.0

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Source: ECT, 2002.

Table 4.26-22 Joshua Creek Basin Summary of Land Cover Changes for 1975 through 2025.

Land Cover	1975 Sum Acres	1975 Adjusted Acres	1975 % of Area	2000 Sum Acres	2000 % of Area	2000-1975 Change Acres	2000-1975 Change as %	2025 Sum Acres	2025 % of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	807	807	1.0	2,855	3.7	2,048	2.6	21,399	27.6	18,544	23.9	20,592	26.6
160	9	9	0.0	0	0.0	-9	0.0	0	0.0	0	0.0	-9	0.0
200[2]	0	0	0.0	1,134	1.5	1,134	1.5	656	0.8	-478	-0.6	656	0.8
210	39,260	39,260	50.7	32,543	42.0	-6,717	-8.7	24,569	31.7	-7,974	-10.3	-14,691	-19.0
220	6,194	6,194	8.0	22,273	28.8	16,079	20.8	15,321	19.8	-6,952	-9.0	9,127	11.8
300's	16,580	16,736	21.6	5,200	6.7	-11,537	-14.9	4,361	5.6	-839	-1.1	-12,375	-16.0
400's	3,880	4,390	5.7	3,820	4.9	-570	-0.7	1,855	2.4	-1,965	-2.5	-2,534	-3.3
500's	312	336	0.4	434	0.6	99	0.1	305	0.4	-130	-0.2	-31	0.0
610-630	4,383	3,847	5.0	3,037	3.9	-810	-1.0	3,037	3.9	0	0.0	-810	-1.0
640-650	5,796	5,643	7.3	5,037	6.5	-606	-0.8	5,037	6.5	0	0.0	-606	-0.8
700's	0	0	0.0	26	0.0	26	0.0	12	0.0	-14	0.0	12	0.0
800's	229	229	0.3	1,091	1.4	862	1.1	897	1.2	-193	-0.2	669	0.9
Total	77,450	77,450	100.0	77,450	100.0	0	0.0	77,450	100.0	0	0.0	0	0.0

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Source: ECT, 2002.

Table 4.26-23 Hydrologic Soil Types in Payne Creek, Horse Creek and Joshua Creek

Soil Type	Payne Creek %	Horse Creek %	Joshua Creek %
A	9	0.9	0.3
B	47.9	83.6	87.4
C	11.2	7.4	3.7
D	31.9	8.1	8.6
Total	100	100	100

Source: CHNEP, 1999.

Table 4.26-24 Summary Rainfall/Streamflow Relationship of Payne Cr., Horse Cr. And Joshua Cr.for 1963-1999.

Period	Payne Cr Streamflow (in/yr)	Payne Cr Basin Rain (in/yr) [Average FTG & Wauchula]	% Rain as Streamflow	Horse Cr Streamflow (in/yr)	Horse Cr Basin Rain (in/yr) [Average FTG & Arcadia]	% Rain as Streamflow	Joshua Cr Streamflow (in/yr)	Joshua Cr Basin Rain (in/yr) [Arcadia]	% Rain as Streamflow
Total for period:									
1963-68	12.10	49.44	24.5	12.27	51.43	23.9	10.11	52.78	19.1
1970-79	--	--	--	8.35	48.81	17.1	8.63	47.38	18.2
1980-89	10.28	49.96	20.6	9.68	51.26	18.9	9.39	52.39	17.9
1990-99	14.27	54.23	26.3	12.36	51.75	23.9	12.24	49.42	24.8

Note: -- = no data
Streamflow also includes NPDES discharges to streams

Table 4.26-25 Description of Stream Segments in Peace River Basin for Water Quality Summary Table

Peace River
P.1 – Saddle Creek from headwaters to SR. 555 bridge
P.2 – Peace Creek drainage canal from headwaters to confluence with Peace River
P.3 – Peace River from SR. 555 bridge to confluence with Sixmile Creek at Clear Springs
P.4 – Peace River from confluence with Sixmile Creek to SR. 657 bridge
P.5 – McCullough Creek and Whidden Creek from headwaters to confluence with Peace River
P.6 – Bowlegs Creek from headwaters to confluence with Peace River
P.7 – Peace River from SR. 657 bridge to confluence with Little Payne Creek
P.8 – Payne Creek from headwaters to confluence with Peace River
P.9 – Peace River from confluence with Payne Creek to DeSoto County Line
P.10 – Charlie Creek from headwaters to confluence with Peace River
P.11 – Peace River from DeSoto County line to SR 70 bridge
P.12 – Peace River from SR 70 bridge to SR 760 bridge
P.13 – Joshua Creek from headwaters to confluence with Peace River
P.14 – Peace River from SR 760 bridge to Interstate 75 bridge

Horse Creek
HC.1 – Horse Creek from headwaters to SR 64 bridge
HC.2 – Horse Creek from SR 64 bridge to DeSoto County line
HC.3 – Horse Creek from DeSoto County line to SR 761 bridge
HC.4 – Horse Creek from SR 761 bridge to confluence with Peace River

Prairie Creek
S.1 – Prairie Creek and Myrtle Slough from headwaters to SR 31 bridges
S.2 – Prairie Creek and Shell Creek from SR 31 bridges to SR 764 bridges
S.3 – Prairie Creek and Shell Creek from SR 764 bridges to mouth of Shell Creek

Charlotte Harbor
CH.1 – Charlotte Harbor north of latitude 26°52’00” and east of longitude 82°09’00”
CH.2 – Charlotte Harbor north of latitude 26°52’00” and west of longitude 82°09’00”
CH.3 – Charlotte Harbor south of latitude 26°52’00”

Note: Stream Segments correspond to Plate 1 of “Volume V: Water” from the Central Florida Phosphate Industry Areawide EIS, September 1978.
Source: USEPA, 1978.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.1											P.2										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	54	202	105	-	-	-	-	NA	NA	NA	NA	16	182	106	13	13	13.00	1	-	-	-	-
BOD_5	mg/L	310	0.5	4.0	2.0	0.7	9.4	3.28	33	1.1	7.6	2.88	21	1.7	7.7	4.0*	1.2	2.2	1.77	3	-	-	-	-
Color	PCU	80	30	160	63	10	240	90.77	78	30	280	91.79	28	40	40	40#	70	350	152.86	14	-	-	-	-
Conductivity	µmhos/cm	95	230	487	352	198	491	304.12	59	203	346	267.73	15	80	439	273	103	1150	272.95	20	-	-	-	-
Dissolved Oxygen	mg/L	300	0.6	15	6.2	0.1	16.7	7.21	125	1.4	13.5	6.49	47	0.6	10.8	4.7	0.2	9.8	4.43	21	-	-	-	-
Flouride (Dissolved)	mg/L as F	950	0.3	14	3.6	0.6	0.9	0.70	4	-	-	-	-	0	3.4	0.6	0.3	2.1	0.75	4	-	-	-	-
Nitrate-N	mg/L as N	620	0	5.7	0.2	0	0.74	0.10	46	-	-	-	-	0	0.57	0.14	0.01	0.048	0.03	6	-	-	-	-
Ammonia-N	mg/L as N	610	0.01	1.9	0.17	0.01	15	0.39	60	0.01	0.44	0.08	32	0.01	0.43	0.15	0.01	0.19	0.12	4	-	-	-	-
Organic-N	mg/L as N	605	0.04	4.02	0.62	0.46	5	1.48	18	NA	NA	NA	NA	0.13	1.76	1.33	1.7	2.2	1.95	4	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.33	26	2.82	84	0.4	14	2.67	39	-	-	-	1.66	2.4	1.99	5	-	-	-	-
pH	Std. Units	400	6.5	9.2	7.7	6.35	10.4	8.12	104	5.82	9.3	7.52	40	6.5	8.1	7.4	5.5	7.1	6.61	7	-	-	-	-
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.02	0.92	0.28	30	0.05	0.37	0.13	16	-	-	-	0.2	0.8	0.49	4	-	-	-	-
Total Phosphorus	mg/L as P	665	-	-	-	0.15	4.4	0.66	89	0.11	1.1	0.36	47	-	-	-	0.23	1.51	0.65	11	-	-	-	-
Temperature	°C	10	10	30	24.7	11	34	24.54	121	16.5	33.5	26.37	42	12.3	31	24.1	11.5	31.5	23.07	19	-	-	-	-
Turbidity	JTU	70	1	32	6.7	1.6	14.4	6.20	5	NA	NA	NA	NA	15	25	20#	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	0.5	27	4.53	70	1.2	15	4.23	28	-	-	-	7	16	10.04	5	-	-	-	-
Turbidity	NTU	82078	-	-	-	-	-	-	-	NA	NA	NA	NA	-	-	-	2	25	10.27	15	-	-	-	-
Total Organic Carbon	mg/L as C	680	5.5	57	26.3*	4	52	20.92	26	11	31	21.00	3	4	34	24.8#	20	48	31.75	4	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	-	-	-	76	76	76.00	1	-	-	-	-	90	90	90#	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	2	94	19*	2	690	89.20	15	172	172	172	1	-	-	-	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

[1] Membrane filter or most probable number.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.3											P.4										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	13	168	81	7	69	39.00	5	42.8	42.8	42.80	1	20	216	104	-	-	-	-	122.8	122.8	122.80	1
BOD_5	mg/L	310	1.2	8.1	3.4	1.4	3.5	2.69	7	-	-	-	-	0.4	8.4	3.2	1.2	7.8	3.34	7	-	-	-	-
Color	PCU	80	3	200	64	30	240	99.69	32	60	380	161.11	27	20	20	20#	25	180	88.75	4	5	260	115.83	6
Conductivity	µmhos/cm	95	210	790	439	138	1140	349.14	90	148	600	258.63	52	230	600	426	175	695	411.54	71	189	715	405.63	52
Dissolved Oxygen	mg/L	300	1.7	10.9	4.8	1.2	10.2	5.49	91	1.1	11.1	4.48	48	1	10.7	5.9	2.4	11.2	6.40	69	3.1	9.8	6.24	49
Flouride (Dissolved)	mg/L as F	950	0.9	5.2	2.6	0.4	6.9	1.91	23	0.2	1.9	0.37	27	0.6	7	2.3	1.2	2	1.70	3	0.4	2.4	1.18	6
Nitrate-N	mg/L as N	620	0	2.1	0.33	0	8.7	0.86	27	-	-	-	-	0	2	0.75	0	2.07	0.65	11	-	-	-	-
Ammonia-N	mg/L as N	610	0.01	0.93	0.18	0.01	2.1	0.33	57	0.01	0.67	0.12	51	0.01	4.55	0.43	0.01	1.4	0.22	43	0.01	0.75	0.09	52
Organic-N	mg/L as N	605	0.29	13	1.88	0.58	11	3.27	22	-	-	-	-	0.41	8.96	1.39	0.75	8.4	2.81	10	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.98	11	2.95	58	0.8	6.5	2.20	51	-	-	-	0.45	8.45	2.10	43	0.5	3.9	1.46	52
pH	Std. Units	400	4.8	7.8	6.9	5.9	10.1	7.20	76	5.3	7.78	6.67	50	5.6	8.7	7.4	5.7	8.9	7.08	69	5.9	9.1	7.17	52
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	22	22	22.00	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.04	22	3.73	60	0.06	11	1.08	51	-	-	-	0.51	4.9	1.55	45	0.38	2.2	0.83	52
Total Phosphorus	mg/L as P	665	0.04	52	10.41	0	15	3.85	68	0.18	11	1.26	51	-	-	-	0.7	4.9	1.83	46	0.42	3.3	1.08	52
Temperature	°C	10	10	35	23.8	12	34.5	23.95	86	11	32	23.56	52	14	31	24	14	32	23.80	68	12.5	30.5	24.21	53
Turbidity	JTU	70	1	150	19.1	5.5	8	6.75	2	-	-	-	-	2.9	215	59.8#	5	5	5.00	1	-	-	-	-
Turbidity	FTU	76	-	-	-	0	150	16.48	20	-	-	-	-	-	-	-	1	12	6.43	7	-	-	-	-
Turbidity	NTU	82078	-	-	-	3	265	37.61	14	-	-	-	-	-	-	-	2.5	3	2.75	2	-	-	-	-
Total Organic Carbon	mg/L as C	680	8	47	21.3	9	39	21.19	23	13	18	15.00	3	5	28	13.8+	6.2	34	17.05	21	6	14	9.60	3
Hardness	mg/L as $CaCO_3$	900	61	230	130	55	230	131.50	8	-	-	-	-	200	200	200#	93	93	93.00	1	-	-	-	-
Total Coliform[1]	No./100ml	31501	-	-	-	NA	NA	NA	NA	-	-	-	-	400	5000	2700#	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.5											P.6										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	20	226	85	-	-	-	-	50.4	50.4	50.40	1	10	158	64	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.7	9.5	5.4*	-	-	-	-	-	-	-	-	1.1	3.6	2.0#	-	-	-	-	-	-	-	-
Color	PCU	80	-	-	-	10	40	24.50	10	150	150	150.00	1	-	-	-	20	400	94.55	11	-	-	-	-
Conductivity	µmhos/cm	95	-	-	-	348	1080	582.35	17	-	-	-	-	-	-	-	85	1100	422.18	17	-	-	-	-
Dissolved Oxygen	mg/L	300	4	8.1	5.5*	2.1	7.7	4.70	17	7.8	7.8	7.80	1	5.8	9	7.7#	2.9	11	6.15	18	-	-	-	-
Flouride (Dissolved)	mg/L as F	950	0.6	15.5	3.9	-	-	-	-	-	-	-	-	0.3	1.6	1	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	9.4	0.89	0.91	0.91	0.91	1	-	-	-	-	0	2.2	0.5	0.44	1.86	1.15	2	-	-	-	-
Ammonia-N	mg/L as N	610	0	29.4	1.47	-	-	-	-	0.12	0.12	0.12	1	0.01	0.14	0.05	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.08	1.72	0.88	-	-	-	-	-	-	-	-	0.45	0.77	0.6	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	1.71	1.71	1.71	1	1.1	1.1	1.10	1	-	-	-	0.83	0.83	0.83	1	-	-	-	-
pH	Std. Units	400	6.1	8.5	7.2	6.4	6.9	6.67	3	7.1	7.1	7.10	1	5.8	8	7.1	6	7.4	6.60	3	-	-	-	-
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	8.98	8.98	8.98	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L as P	665	-	-	-	1.98	17.55	7.11	11	0.88	0.88	0.88	1	-	-	-	0.41	2.79	0.92	10	-	-	-	-
Temperature	°C	10	12.8	31	24.3	10.5	28.1	21.94	15	28.7	28.7	28.70	1	10	28	21.8	11.5	28	21.77	14	-	-	-	-
Turbidity	JTU	70	6.5	86	40.2#	4	4	4.00	1	-	-	-	-	1.8	1.8	1.8#	25	25	25.00	1	-	-	-	-
Turbidity	FTU	76	-	-	-	5.5	5.5	5.50	1	9.2	9.2	9.20	1	-	-	-	6.5	6.5	6.50	1	-	-	-	-
Turbidity	NTU	82078	-	-	-	2	25	11.04	14	-	-	-	-	-	-	-	1	25	8.04	15	-	-	-	-
Total Organic Carbon	mg/L as C	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	-	-	-	-	-	-	-	260	260	260.00	1	-	-	-	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.7											P.8										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	8	178	84	-	-	-	-	-	-	-	-	18	212	68	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.0	78.0	15.6	-	-	-	-	-	-	-	-	1.6	2.5	2.1#	-	-	-	-	-	-	-	-
Color	PCU	80	0	252	91*	15	280	63.33	54	-	-	-	-	-	-	-	150	300	225.00	2	-	-	-	-
Conductivity	µmhos/cm	95	3	530	219*	10.8	1080	412.48	54	-	-	-	-	-	-	-	100	400	260.00	5	-	-	-	-
Dissolved Oxygen	mg/L	300	0.4	10.3	5.1	2.7	10.8	5.77	52	-	-	-	-	5.6	8.9	7.1#	3.6	7.9	6.10	5	-	-	-	-
Flouride (Dissolved)	mg/L as F	950	0.2	18	2.1	-	-	-	-	-	-	-	-	0.7	1.7	1.2	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	4.3	1.23	0.06	3.3	1.41	11	-	-	-	-	0	3.65	1.25	-	-	-	-	-	-	-	-
Ammonia-N	mg/L as N	610	0	3.8	0.44	0.02	2.53	0.36	12	-	-	-	-	0.01	0.28	0.13	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.48	7.95	1.18	1.56	1.56	1.56	1	-	-	-	-	0.29	1.27	0.83	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.4	4.591	1.47	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	Std. Units	400	4	8.7	7.3	6.3	8.3	7.24	27	-	-	-	-	6.7	7.9	7.3	6.4	7	6.70	2	-	-	-	-
Orthophosphate (Dissolved)	mg/L as P	671	4.81	5.56	5.19#	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	4.39	7.86	6.50	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L as P	665	-	-	-	0.23	10.43	2.96	45	-	-	-	-	-	-	-	0.902	0.902	0.90	1	-	-	-	-
Temperature	°C	10	11.1	30	23.2	11.5	29.6	23.03	64	-	-	-	-	11.7	28	23.1	18	26	21.80	5	-	-	-	-
Turbidity	JTU	70	2.1	20	6.2	2.5	90	14.90	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	0.9	20	5.40	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	82078	-	-	-	0.9	76	15.79	33	-	-	-	-	-	-	-	1.5	11	4.56	5	-	-	-	-
Total Organic Carbon	mg/L as C	680	3	28	12.3*	6	31	17.56	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	100	5100	1219*	10	5900	773.00	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period

[1] Membrane filter or most probable number.

The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.9											P.10										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	44	600	76	45	45	45.00	1	98	98	98.00	1	16	61	42#	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.1	6.3	2.0	0.8	3.5	1.75	6	-	-	-	-	0.7	1.7	1.2#	0.9	1.8	1.27	7	-	-	-	-
Color	PCU	80	0	140	55	10	220	67.69	13	30	240	86.88	8	10	200	83#	50	320	175.71	7	40	430	270.00	5
Conductivity	µmhos/cm	95	130	742	413	210	640	391.56	75	210	616	388.47	53	93	300	180	75	410	192.72	39	107	447	255.74	42
Dissolved Oxygen	mg/L	300	0	9.2	6.3	5.2	12.9	7.80	74	3.8	12.6	7.34	45	4.5	9.6	7.1	3.5	16.8	7.26	39	4	10	6.44	40
Flouride (Dissolved)	mg/L as F	950	0.5	8.6	1.4	1	3.6	1.79	12	0.7	1.8	1.26	8	0.3	0.6	0.5#	0.3	0.7	0.41	7	0.2	0.4	0.26	5
Nitrate-N	mg/L as N	620	0	4.6	1.23	0.47	9.2	1.55	27	-	-	-	-	-	-	-	0	0.46	0.13	20	-	-	-	-
Ammonia-N	mg/L as N	610	0	2.36	0.22	0.01	0.8	0.09	59	0.01	0.33	0.05	50	-	-	-	0	0.15	0.04	29	0.02	0.1	0.05	43
Organic-N	mg/L as N	605	0.38	1.9	0.91	0.43	3.6	1.01	25	-	-	-	-	0.55	0.59	0.57#	0.47	3.1	1.38	20	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.48	4.9	1.17	60	0.66	1.6	1.09	50	-	-	-	0.36	3.13	1.35	28	0.4	1.9	1.13	43
pH	Std. Units	400	4.2	8.4	7.3	6.4	9.1	7.29	74	6	9.2	7.30	53	6.7	8	7.3#	5.8	8.7	7.07	39	5.1	9.3	6.54	43
Orthophosphate (Dissolved)	mg/L as P	671	4.86	4.86	4.86#	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.03	5.1	1.97	59	0.46	1.4	0.93	50	-	-	-	0.25	0.86	0.47	29	0.21	0.95	0.55	43
Total Phosphorus	mg/L as P	665	1.9	21	4.09	0.07	5.4	2.18	60	0.66	1.6	1.09	50	-	-	-	0.27	0.94	0.53	29	0.23	0.95	0.59	42
Temperature	°C	10	11.1	38	23	9	32	22.48	75	13	30	24.60	51	13	31	25.2	14.5	32	24.58	39	12	29.6	24.17	43
Turbidity	JTU	70	2	241	160.8	0.3	15	3.65	13	-	-	-	-	5	6	5.5#	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3.2	1.65	19	-	-	-	-
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	6.9	17	12#	6.5	26	13.91	21	5.7	17	10.43	3	0	35	17.1#	12	38	25.45	11	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	98	260	166	87	250	151.67	6	-	-	-	-	38	77	61#	49	99	79.00	3	-	-	-	-
Total Coliform[1]	No./100ml	31501	250	9000	2735#	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

[1] Membrane filter or most probable number.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.11											P.12										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	15	176	54	34	104	56.48	21	28.4	85	58.87	6	34	73	49#	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.1	3.7	1.7	0.8	3.2	2.14	5	1.1	1.85	1.43	8	0.1	3.1	1.4	1.3	1.3	1.30	1	0.4	2	1.23	3
Color	PCU	80	0	280	86	15	400	130.06	78	20	320	141.22	41	30	220	104#	30	240	115.00	6	40	120	77.50	4
Conductivity	µmhos/cm	95	100	630	358	107	554	264.90	277	81	556	340.66	175	300	605	446#	730	730	730.00	1	-	-	-	-
Dissolved Oxygen	mg/L	300	2.3	11.8	7.4	2.4	13.5	6.36	347	3.2	12.4	6.72	184	4.8	9.5	6.4	1.9	12.9	6.74	8	7.2	8.2	7.50	4
Flouride (Dissolved)	mg/L as F	950	0.5	2.7	1.4	0.1	2.7	1.23	65	0.162	2.3	0.83	71	0.4	2.4	1.2#	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	3.9	1.13	0.06	2.25	0.85	59	-	-	-	-	0	2.02	1	0.06	1.44	0.82	5	-	-	-	-
Ammonia-N	mg/L as N	610	0	0.42	0.11	0.01	0.16	0.06	77	0.01	0.76	0.06	49	0.02	0.37	0.16	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.27	2.12	0.92	0.24	3.85	1.26	49					0.52	2.56	1.33#	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.68	7.1	2.18	117	0.5	1.8	1.00	92	-	-	-	1.26	5.03	2.20	6	0.73	0.87	0.80	3
pH	Std. Units	400	-	-	-	5.7	9.5	6.96	317	5.68	8.7	7.14	183	7	8.1	7.4#	6.8	9.5	7.36	7	7.1	7.6	7.30	4
Orthophosphate (Dissolved)	mg/L as P	671	1	1	1#	0.58	6.4	1.63	42	0.12	1.3	0.68	50	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.6	6.55	1.90	51	0.48	1.5	0.85	38	-	-	-	0.78	0.78	0.78	1	-	-	-	-
Total Phosphorus	mg/L as P	665	0.03	10	2.77	0.68	7.1	2.18	117	0.525	1.5	0.91	85	-	-	-	0.92	2	1.69	6	0.02	1.41	0.91	4
Temperature	°C	10	10	31.5	22.2	12	33	24.52	348	11.5	31	24.09	186	10	29	23.4	15.5	28	23.71	8	21.8	30	25.65	4
Turbidity	JTU	70	0	59	5.4	1	3.4	2.18	5	-	-	-	-	2	56	9.2#	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	0.4	45	5.19	121	0.5	19	4.18	40	-	-	-	3.6	66	16.20	6	2.5	14.4	5.55	4
Turbidity	NTU	82078	-	-	-	24	24	24.00	1	-	-	-	-	-	-	-	8	8	8.00	1	-	-	-	-
Total Organic Carbon	mg/L as C	680	4	20	10.1	0.6	38	18.44	39	6.7	27	16.27	10	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	38	250	139	46	240	141.34	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	2	7000	667*	33	23000	1881.83	54	126	1050	438.67	3	330	910	633*	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26a Summary of Water Quality for Segments of the Peace River

PEACE RIVER																								
		Stream Segment	P.13											P.14										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	0	46	30#	-	-	-	-	-	-	-	-	38	74	51#	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	4.8	4.8	4.8#	0.6	2.6	1.18	5	-	-	-	-	0.3	2.5	1.2	1	1	1.00	1	0.5	1.5	0.90	4
Color	PCU	80	240	240	240#	60	60	60.00	1	50	280	130.00	24	30	300	130	120	200	135.00	8	40	240	84.00	5
Conductivity	µmhos/cm	95	151	990	491	233	722	460.41	46	281	1480	696.21	43	260	750	540#	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	300	-	-	-	3.2	11.6	6.84	44	5.2	11.1	7.09	35	4	9	6.2	4	11.5	7.28	9	4.2	8.4	6.85	4
Flouride (Dissolved)	mg/L as F	950	0.1	0.1	0.1#	0.8	0.8	0.80	1	0.18	0.5	0.35	24	0.5	1.4	0.9#	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	0	0#	0.34	0.34	0.34	1	0.85	0.85	0.85	1	0	2	0.64	0.06	1.09	0.65	4	-	-	-	-
Ammonia-N	mg/L as N	610	0.1	0.1	0.1#	0.03	0.15	0.06	18	0.02	0.13	0.05	43	0.04	0.45	0.16	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.92	1.5	1.21#	0.53	0.53	0.53	1	1.36	1.36	1.36	1	0.54	2.5	1.35	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.34	1.7	0.84	18	0.6	1.7	1.01	43	-	-	-	0.97	2.6	1.43	5	0.69	1.4	0.94	5
pH	Std. Units	400	4.3	4.3	4.3#	6.2	8.5	7.17	44	5.91	8.8	6.99	43	6.4	8.2	7.4#	7	9.1	7.56	5	6	7.4	7.04	5
Orthophosphate (Dissolved)	mg/L as P	671	0.02	0.02	0.02#	0.26	0.26	0.26	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.15	0.45	0.29	18	0.06	0.29	0.17	43	-	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L as P	665	0.04	0.18	0.11#	-	-	-	-	0.07	0.44	0.21	42	-	-	-	0.75	1.67	1.40	5	-	-	-	-
Temperature	°C	10	2.4	30	23.5	12	31	23.66	46	9	29.1	22.91	43	10	29	23.4	17	32	24.61	9	19.1	27	22.13	4
Turbidity	JTU	70	8	8	8#	-	-	-	-	-	-	-	-	1	19	4.6#	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	1.3	1.3	1.30	1	-	-	-	-	-	-	-	2.9	39	9.40	10	1.5	3.5	2.06	5
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	20.5	20.5	20.5#	13	23	17.38	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	9	94	64#	170	170	170.00	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	-	-	-	-	-	-	-	-	-	-	-	110	580	355	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin

HORSE CREEK																								
		Stream Segment	HC.1											HC.2										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	18	38	28#	-	-	-	-	-	-	-	-	18	18	18#	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	1.3	2.1	1.8+	1	1	1.00	1	0.7	1.2	0.97	3	0.6	3.6	1.9#	0.7	0.7	0.70	1	0.6	2.9	1.47	7
Color	PCU	80	80	320	180+	60	480	226.77	31	120	240	173.33	3	60	240	158#	50	480	251.18	51	100	400	248.57	7
Conductivity	µmhos/cm	95	60	170	131+	100	100	100.00	1	-	-	-	-	95	285	208#	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	300	5.2	9.6	7.5+	1.3	10.4	5.88	32	5.8	7.6	6.97	3	1.4	8.1	5.2#	0.2	9.9	3.28	52	1.4	7	4.10	7
Flouride (Dissolved)	mg/L as F	950	0.3	0.4	0.3#	-	-	-	-	-	-	-	-	0.4	0.4	0.4#	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	0.44	0.1	0.06	0.82	0.15	12	-	-	-	-	0.04	0.44	0.12*	0.06	1.55	0.14	22	-	-	-	-
Ammonia-N	mg/L as N	610	0	0.34	0.1+	-	-	-	-	-	-	-	-	0	0.36	0.11*	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.53	2.06	1.17+	-	-	-	-	-	-	-	-	0.53	2.19	1.35*	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.31	2.05	1.07	12	0.51	2.5	1.23	3	-	-	-	0.62	1.69	1.20	24	0.61	1.7	1.24	7
pH	Std. Units	400	6.4+	8.6	7.4+	5.6	7.6	6.63	10	6.3	7.2	6.83	3	5.7	7.5	6.5#	5.2	7.3	6.24	19	5.7	7.2	6.52	6
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.25	0.25	1	-	-	-	-
Total Phosphorus	mg/L as P	665	0.21	1.35	0.81#	0.27	1.12	0.56	13	0.28	0.41	0.35	3	0.36	0.36	0.36#	0.2	0.85	0.43	24	0.16	0.44	0.28	7
Temperature	°C	10	19.5	28	24.8+	7	29	22.83	31	18	25	20.67	3	19.5	32	24.8*	9	29	23.88	51	19	28	23.79	7
Turbidity	JTU	70	1	8	2.7+	1.8	25.5	7.83	4	-	-	-	-	1.5	8	2.4#	1	5.5	2.22	9	-	-	-	-
Turbidity	FTU	76	-	-	-	1	6	2.17	27	1.2	2.9	1.97	3	-	-	-	0.5	4.2	1.82	42	1.2	3.7	2.36	7
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	-	-	-	20	20	20.00	1	-	-	-	-	-	-	-	27	27	27.00	1	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	-	-	-	25.7	53	35.57	3	-	-	-	-	-	-	-	28.7	45	36.18	4	-	-	-	-
Total Coliform[1]	No./100ml	31501	-	-	-	-	-	-	-	-	-	-	-	170	270	220#	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period

[1] Membrane filter or most probable number.

The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin

HORSE CREEK																								
		Stream Segment	HC.3											HC.4										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	11	333	161*	-	-	-	-	12.3	50	35.06	7	190	333	241*	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.1	30.5	5.5	0.4	1.4	0.78	5	0.6	4.2	1.56	37	0.1	30.5	5.3	-	-	-	-	0.95	1.1	1.03	2
Color	PCU	80	30	480	173	-	-	-	-	-	-	-	-	80	200	110+	200	200	200.00	1	50	240	145.00	2
Conductivity	µmhos/cm	95	65	753	272	70	702	295.14	71	64	945	323.44	54	110	450	280#	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	300	1.3	13.2	6.2	2.4	12.6	6.74	214	3.9	10.7	6.77	96	1.3	10	5.4	5.9	5.9	5.90	1	4.9	6.5	5.70	2
Flouride (Dissolved)	mg/L as F	950	0.2	1.2	0.5*	0.3	0.6	0.43	9	0.1	0.53	0.28	27	0.4	0.4	0.4#	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	0.23	0.1	0	1	0.20	94	0.21	0.21	0.21	1	0.03	0.1	0.08+	-	-	-	-	-	-	-	-
Ammonia-N	mg/L as N	610	0	0.34	0.13	0	0.27	0.06	78	0.01	3.2	0.09	77	0	0.14	0.05+	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0.49	1.87	1.03	0.46	1.8	0.97	41	0.97	0.97	0.97	1	0.64	2.2	1.19+	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.2	2.09	0.98	143	0.4	3	1.05	102	-	-	-	-	-	-	-	0.46	1.2	0.83	2
pH	Std. Units	400	5.9	8.5	7.2*	5.2	9	6.92	146	4.4	8.46	6.64	92	6.6	8.4	7.5	-	-	-	-	6.4	7.3	6.85	2
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.05	1	0.50	74	0.25	0.74	0.41	56	-	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L as P	665	0.31	0.79	0.49#	0.25	1.41	0.56	145	0.21	0.89	0.45	100	0.48	0.48	0.48#	-	-	-	-	0.21	0.28	0.25	2
Temperature	°C	10	15	32	24.2	11	31.5	23.38	211	10	30	23.25	102	15	28	23.1	26	26	26.00	1	21.3	26	23.65	2
Turbidity	JTU	70	1	3	1.6	1	7.5	2.65	13	-	-	-	-	1	3	1.3+	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	0	14.1	2.03	145	0.5	5.5	2.77	47	-	-	-	3.5	3.5	3.50	1	0.5	3.5	2.00	2
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	4	29	16.3*	7.8	39	21.65	33	9.7	36	21.31	12	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	0	27	14#	31	110	65.60	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	10	680	194*	20	940	206.06	18	50	1550	574.00	15	160	160	160#	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period

[1] Membrane filter or most probable number.

The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin

PRAIRIE CREEK																								
		Stream Segment	S.1											S.2										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	3	130	73#	-	-	-	-	147	156	152.00	3	22	95	55#	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.6	3.2	1.9#	-	-	-	-	0.3	2	1.10	6	0.6	18.0	3.7*	0.3	1.1	0.80	4	0.8	1.2	0.93	3
Color	PCU	80	20	100	66#	-	-	-	-	40	160	83.33	6	20	200	70	30	240	84.29	21	40	580	153.33	9
Conductivity	µmhos/cm	95	95	1700	796#	-	-	-	-	-	-	-	-	167	970	501	160	4048	615.70	50	183	1882	609.12	52
Dissolved Oxygen	mg/L	300	2.8	10.5	6.2#	-	-	-	-	3	10	7.47	6	2.6	10.9	6.3	2.5	11.2	6.78	73	1.8	12.8	6.38	52
Flouride (Dissolved)	mg/L as F	950	0.1	1	0.5#	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.5	0.30	5
Nitrate-N	mg/L as N	620	0.03	0.27	0.11#	-	-	-	-	-	-	-	-	0	0.3	0.1*	0.06	0.56	0.19	4	-	-	-	-
Ammonia-N	mg/L as N	610	0.04	0.25	0.11#	-	-	-	-	0.075	0.14	0.10	4	0	0.76	0.22*	0.02	0.18	0.08	4	0.01	0.16	0.05	44
Organic-N	mg/L as N	605	0.75	1.9	1.32#	-	-	-	-	-	-	-	-	0.32	3.14	1.06*	0.38	0.88	0.69	3	-	-	-	-
TKN	mg/L as N	625	-	-	-	-	-	-	-	0.76	1.8	1.08	6	-	-	-	0.4	0.93	0.78	5	0.49	1.9	1.09	47
pH	Std. Units	400	6.1	8.3	7.6*	-	-	-	-	6.3	7.6	6.83	4	6.4	8.5	7.9*	6.4	9.1	7.45	51	6.1	8.35	7.18	55
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.31	0.08	43
Total Phosphorus	mg/L as P	665	-	-	-	-	-	-	-	0.03	0.15	0.06	6	0	0.44	0.09	0.04	0.08	0.06	5	0.02	0.33	0.10	47
Temperature	°C	10	16	31	25.5*	-	-	-	-	18	26	21.20	6	11.5	31	24.8	10.5	34	24.50	71	12	31	24.53	56
Turbidity	JTU	70	1	3	1.8#	-	-	-	-	-	-	-	-	1	7.5	2.5	1	1.5	1.25	2	-	-	-	-
Turbidity	FTU	76	-	-	-	-	-	-	-	4.3	8.9	5.92	6	-	-	-	1.1	7.4	2.64	18	2.1	8	4.35	4
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	-	-	-	-	-	-	-	-	-	-	-	16	16	16#	10	27	21.63	8	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	15	339	73#	-	-	-	-	-	-	-	-	75	114	89#	228.9	261	244.95	2	-	-	-	-
Total Coliform[1]	No./100ml	31501	144	144	144#	-	-	-	-	280	980	572.50	4	32	32	32#	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin

			PRAIRIE CREEK											CHARLOTTE HARBOR										
		Stream Segment	S.3											CH.1										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	22	95	56#	130	130	130.00	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	0.4	3.0	1.7*	0.5	5.3	1.95	15	0.9	2.7	1.58	5	0.5	2.2	1.3*	0.85	11.4	2.38	58	0.8	7.8	2.24	19
Color	PCU	80	50	240	107*	45	240	104.38	24	35	420	145.00	11	30	200	69*	5	480	81.18	93	5	280	43.41	22
Conductivity	µmhos/cm	95	165	1040	575	243	1200	666.55	51	218	1300	709.69	48	3400	42,000	25200*	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	300	0.5	9.1	3.8	0.2	9.5	5.03	73	1.5	9.6	4.81	54	0	8.6	5.3*	2.7	15	7.48	85	2.9	9.7	6.13	31
Flouride (Dissolved)	mg/L as F	950	0.2	0.4	0.3#	0.4	0.4	0.40	2	0.1	0.4	0.24	5	-	-	-	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0.01	0.26	0.11*	0.05	0.33	0.10	13	-	-	-	-	0	0.13	0.08+	0.06	0.12	0.06	54	-	-	-	-
Ammonia-N	mg/L as N	610	0.05	0.62	0.2*	0.02	0.09	0.05	21	0.01	0.11	0.05	38	0	0.28	0.05*	0.02	0.38	0.05	50	0.01	0.1	0.03	14
Organic-N	mg/L as N	605	0.21	2.79	1.28*	0.8	0.8	0.80	1	-	-	-	-	0	2.49	0.71*	0.59	1.39	0.85	10	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.47	1.8	0.99	35	0.62	2	1.07	44	-	-	-	0.36	8.77	0.89	66	0.52	1.7	0.81	18
pH	Std. Units	400	6.2	7.6	7.0*	6	9	7.26	58	5.9	8.46	7.33	53	7.2	8.5	7.7*	6.3	8.5	7.72	76	6.7	8.5	7.60	31
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	0.06	0.06	0.06	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	0.05	0.25	0.12	18	0.04	0.66	0.12	38	-	-	-	-	-	-	-	0.17	0.26	0.22	2
Total Phosphorus	mg/L as P	665	0	0.51	0.17*	0.07	0.4	0.16	35	0.05	0.94	0.16	44	0.08	0.59	0.3*	0.11	1.19	0.35	65	0.05	0.76	0.21	21
Temperature	°C	10	14	32	23.9	12	31	23.95	73	13.5	30	24.98	54	20	31	24.1*	15	33.5	24.68	90	19.7	30	27.21	31
Turbidity	JTU	70	1	8	2.8*	-	-	-	-	-	-	-	-	1	15	4.5*	2	7	4.50	4	-	-	-	-
Turbidity	FTU	76	-	-	-	0.5	4.5	2.74	23	2.2	8	4.70	6	-	-	-	0.5	9.2	2.54	89	0.3	4.5	2.31	22
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	3	28	17.2#	15	25	21.57	7	-	-	-	-	7.4	17	11.9#	-	-	-	-	7.5	8.6	8.05	2
Hardness	mg/L as $CaCO_3$	900	72	72	72#	140	250	195.00	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	56	220	141#	-	-	-	-	-	-	-	-	2	600	130#	16	16	16.00	1	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

Absence of qualifier signal for 1970-1976 period

[1] Membrane filter or most probable number.

The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-26b Summary of Water Quality for Stream Segments in Peace River Basin

CHARLOTTE HARBOR																								
		Stream Segment	CH.2											CH.3										
			1970-1976			1980-1989				1990-1999				1970-1976			1980-1989				1990-1999			
PARAMETERS	Units	STORET Value	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Min.	Max.	Avg.	Count	Min.	Max.	Avg.	Count
Alkalinity	mg/L as $CaCO_3$	410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BOD_5	mg/L	310	1.0	1.7	1.4#	0.7	3.3	1.75	23	1	5.2	2.29	10	0.8+	2.8	1.5+	-	-	-	-	-	-	-	-
Color	PCU	80	30	200	93#	5	320	78.33	30	15	60	32.27	11	15	120	52+	-	-	-	-	-	-	-	-
Conductivity	µmhos/cm	95	19000	24000	20667#	-	-	-	-	-	-	-	-	30000	37000	32200#	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	300	2.6	8.8	6.1#	4.7	10.2	7.85	27	5.1	8.2	6.71	14	6.1	11.1	9.3#	-	-	-	-	-	-	-	-
Flouride (Dissolved)	mg/L as F	950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate-N	mg/L as N	620	0	0.16	0.09#	0.06	0.12	0.07	19	-	-	-	-	0	0.1	0.06+	-	-	-	-	-	-	-	-
Ammonia-N	mg/L as N	610	0	0.14	0.04#	0.02	0.09	0.04	18	0.01	0.03	0.02	7	0	0.22	0.07+	-	-	-	-	-	-	-	-
Organic-N	mg/L as N	605	0	2.68	0.78#	0.87	0.87	0.87	1	-	-	-	-	0	1.31	0.41+	-	-	-	-	-	-	-	-
TKN	mg/L as N	625	-	-	-	0.4	1.55	0.73	26	0.58	1.2	0.83	9	-	-	-	-	-	-	-	-	-	-	-
pH	Std. Units	400	7.3	8.5	7.9#	7.2	8.3	7.72	25	7.3	8.2	7.65	15	7.4	8.6	8.0+	-	-	-	-	-	-	-	-
Orthophosphate (Dissolved)	mg/L as P	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Orthophosphate	mg/L as P	70507	-	-	-	-	-	-	-	0.2	0.2	0.20	1	-	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	mg/L as P	665	0.12	0.62	0.34#	0.07	0.47	0.27	26	0.04	0.29	0.17	11	0.04	0.45	0.19+	-	-	-	-	-	-	-	-
Temperature	°C	10	25	30.6	28.3#	18	33.4	24.87	29	20.1	29.6	26.85	15	19.7	34.3	26.5*	-	-	-	-	-	-	-	-
Turbidity	JTU	70	2	20	8.3#	-	-	-	-	-	-	-	-	2	20	5.5+	-	-	-	-	-	-	-	-
Turbidity	FTU	76	-	-	-	0.5	4	1.78	30	0.5	3.9	2.07	11	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	82078	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L as C	680	-	-	-	-	-	-	-	7.6	7.6	7.60	1	-	-	-	-	-	-	-	-	-	-	-
Hardness	mg/L as $CaCO_3$	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Coliform[1]	No./100ml	31501	2	2	2#	-	-	-	-	-	-	-	-	2	2	2#	-	-	-	-	-	-	-	-

Note: To present as much information as possible from STORET data during January 1970-December 1976 and still keep the data validity in consideration, certain qualifier signals are included along with actual data values in the "average" column:

[1] Membrane filter or most probable number.

Absence of qualifier signal for 1970-1976 period — The average presented is of at least 10 observations spanning a period of at least 3 years during January 1970-December 1976.

* Average of at least 10 observations not spanning a period of 3 years for each station within the segment

\+ Average of less than 10 observations spanning a 3-year period.

\# Average of less than 10 observations spanning a period of less than 3 years.

\- No data available

Source: USEPA, 1978, USGS, 2001b, USEPA,2001.

Table 4.26-27 Summary of Trend Tests Computed for Peace River Basin Study

Parameter	Units	Peace River Estuary CH.1	Shell Creek above Dam SH.1	Shell Creek below Dam SH.3	Lower Peace River P.14	Horse Creek HC.3	Peace River at Arcadia P.12
Conductivity	µmhos/cm	NS	ID	ID	NS	ID	ID
Color	PCU	NS	NS	NS	NS	NS	NS
Turbidity	NTU	NS	NS	NS	I	I	I
Nitrite-Nitrate Nitrogen	mg/L	D	NS	NS	I	I	NS
Total Kjeldahl Nitrogen	mg/L	I	NS	NS	D	NS	D
Ortho-Phosphate	mg/L	D	D	D	D	D	D
Total Phosphorus	mg/L	D	NS	D	D	D	D
Chlorophyll a	µg/L	NS	NS	NS	NS	I	NS

Notes:
NS = Indicates no Significant Trend
D = Indicates Decreasing Trend
I = Indicates Increasing Trend
ID = insufficient Data to Detect Trend

Source: CHNEP, 1999.

Table 4.26-28 Payne Creek NPDES Mine Water Discharge Sampling 1976 - 2000

Parameter	Units	Minimum	Mean	Maximum	# samples
Ph	Std Units	5.75	7.3	8.22	1261
Conductance	µmhos/cm	124	285	739	325
Temperature	°C	9.5	22.4	30.4	377
Turbidity	NTU	0	2.9	35	1261
DO	mg/L	2	6.7	11.8	320
TSS	mg/L	0.1	2.9	25.5	1123
Fluoride	mg/L	0.23	1.23	6.5	1061
Sulfate	mg/L	1	33.8	185	221
Orthophosphate	mg/L	0.12	0.61	5	1060
Total Phosphorus	mg/L	0.05	0.68	5	1122
TKN	mg/L	0.2	0.63	2.87	184
Nitrate/Nitrite	mg/L	0.02	0.11	0.56	94
Chloride	mg/L	4	11.4	28	120
TDS	mg/L	190	216.4	243	14
Alkalinity	mg/L $CaCO_3$	0.54	59.6	178	1061

Source: IMC, 2002.

Table 4.26-29 Payne Creek NPDES Mine Water Discharge Trends 1993 - 2000

Parameter	Percentage of the Behavior of the Parameter that is Explained by Time	Trend	Initiation of Sampling
pH	0%	No Significant Trend	1976
Conductivity	0%	No Significant Trend	1994
Temperature	1%	No Significant Trend	1993
Turbidity	0	No Significant Trend	1976
DO	30%	Significant Upward Trend	1994
Total P	2%	No Significant Trend	1976
TSS	2%	No Significant Trend	1976
TKN	0%	No Significant Trend	1994
Sulfate	1%	No Significant Trend	1976
Fluoride	10%	Significant Downward Trend	1976 - 1996
Alkalinity	39%	Significant Upward Trend	1976 - 1996
Ortho-phosphorus	2%	No Significant Trend	1976 - 1996
Nitrate	7%	No Significant Trend	1976 - 1996
Nitrite	1%	No Significant Trend	1976 - 1996
Ammonia	0%	No Significant Trend	1976 - 1996

Source: IMC, 2002.

Table 4.26-30 Horse Creek NPDES Mine Water Discharge Sampling 1988 - 2000

Parameter	Units	Minimum	Mean	Maximum	# samples
pH	Std Units	4.52	5.91	6.79	298
Conductivity	µmhos/cm	34	100	206	287
Temperature	°C	9.9	22.2	29.7	297
Turbidity	NTU	0.4	2.7	16	296
DO	mg/L	1.48	4.9	9.8	294
Total P	mg/L	0.11	0.47	6.75	290
TSS	mg/L	0.2	2.3	19	290
TKN	mg/L	0.18	1.23	6.2	280
Ammonia	mg/L	0.01	0.05	0.27	203
Nitrate	mg/L	0.01	0.03	0.12	146
Nitrite	mg/L	0.01	0.01	0.1	145
Nitrate/Nitrite	mg/L	0.02	0.07	1.76	143
TDS	mg/L	1.7	130	330	177
Sulfate	mg/L	0.3	8.41	55	266
Ortho-P	mg/L	0.05	0.37	1.2	199
Fluoride	mg/L	0.09	0.29	2.2	199
Chloride	mg/L	5	14	37	133
Silica	mg/L	1	5	13	129
Alkalinity	mg/L	1	11	27	142
Gross Alpha	pCi/L	0.97	1.3	4	33
Gross Beta	pCi/L	1.9	4.3	7	10
Radium 226	pCi/L	0.2	0.6	0.8	23
Radium 228	pCi/L	0	0.3	1.9	20
Fecal Coliform	#/100 mL	12	243.7	900	14
Chlorophyll – a	mg/kg	0.1	3.1	38	37
BOD	mg/L	0.5	1.4	10.5	89
Total Organic Carbon	mg/L	18	36	80	14
Color	PCU	70	267	750	37
Hardness	mg/L $CaCO_3$	12	29	52	37

Source: IMC, 2002.

Table 4.26-31 Horse Creek NPDES Mine Water Discharge Trends 1988 - 2000

Parameter	Percentage of the Behavior of the Parameter That is Explained by Time	Trend	Initiation of Sampling
pH	0%	No Significant Trend	1988
Conductivity	1%	No Significant Trend	1989
Temperature	1%	No Significant Trend	1988
Turbidity	5%	No Significant Trend	1988
DO	1%	No Significant Trend	1988
Total P	0%	No Significant Trend	1988
TSS	0%	No Significant Trend	1988
TKN	6%	No Significant Trend	1989
TDS	0%	No Significant Trend	1989
Sulfate	0%	No Significant Trend	1988
Ortho-P	0%	No Significant Trend	1988
Fluoride	1%	No Significant Trend	1988
Chloride	7%	No Significant Trend	1988
Silica	2%	No Significant Trend	1994
Alkalinity	15%	Significant Upward Trend	1988
Gross Alpha	3%	No Significant Trend	1989
Coliform	6%	No Significant Trend	1994
Chlorophyll – a	9%	Significant Downward Trend	1994
BOD	5%	No Significant Trend	1989
TOC	14%	Significant Upward Trend	1994
Color	14%	Significant Upward Trend	1994

Source: IMC, 2002.

Table 4.26-32 Horse Creek Basin North of SR 64 Summary of Land Cover Changes for 1975 through 2025.

Land Cover	1975 Sum Acres	1975 Adjusted Acres	1975 % of Area	2000 Sum Acres	2000 % of Area	2000-1975 Change Acres	2000-1975 Change as %	2025 Sum Acres	2025 % of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	0	0	0.0	47	0.2	47	0.2	47	0.2	0	0.0	47	0.2
160	0	0	0.0	6,994	26.7	6,994	26.7	1,198	4.6	-5,797	-22.1	1,198	4.6
200[2]	55	55	0.2	0	0.0	-55	-0.2	0	0.0	0	0.0	-55	-0.2
210	7,187	7,187	27.4	6,312	24.1	-875	-3.3	8,170	31.2	1,858	7.1	983	3.8
220	803	803	3.1	1,015	3.9	212	0.8	892	3.4	-123	-0.5	89	0.3
300's	11,175	11,520	44.0	5,052	19.3	-6,467	-24.7	4,474	17.1	-578	-2.2	-7,045	-26.9
400's	1,983	2,343	8.9	2,552	9.7	209	0.8	4,938	18.8	2,385	9.1	2,594	9.9
500's	0	0	0.0	231	0.9	231	0.9	505	1.9	274	1.0	505	1.9
610-630	2,507	1,851	7.1	1,482	5.7	-369	-1.4	1,906	7.3	424	1.6	55	0.2
640-650	2,489	2,440	9.3	2,358	9.0	-82	-0.3	3,873	14.8	1,515	5.8	1,433	5.5
700's	0	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0	1	0.0
800's	0	0	0.0	155	0.6	155	0.6	195	0.7	40	0.2	195	0.7
Total	26,199	26,199	100.0	26,199	100.0	0	0.0	26,199	100.0	0	0.0	0	0.0

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Source: ECT, 2002.

Table 4.26-33 Horse Creek Basin Between SR 64 and Sr 72 Summary of Land Cover Changes for 1975 through 2025.

Land Cover	1975 Sum Acres	1975 Adjusted Acres	1975 % of Area	2000 Sum Acres	2000 % of Area	2000-1975 Change Acres	2000-1975 Change as %	2025 Sum Acres	2025 % of Area	2025-2000 Change Acres	2025-2000 Change as %	2025-1975 Change Acres	2025-1975 Change as %
100[1]	138	138	0.1	1,434	1.3	1,296	1.2	4,487	4.0	3,053	2.7	4,349	3.9
160	0	0	0.0	1,301	1.2	1,301	1.2	13,422	11.9	12,121	10.8	13,422	11.9
200[2]	17	17	0.0	1,633	1.5	1,616	1.4	1,447	1.3	-186	-0.2	1,430	1.3
210	32,532	32,532	28.9	45,399	40.4	12,867	11.4	38,700	34.4	-6,699	-6.0	6,168	5.5
220	8,629	8,629	7.7	10,041	8.9	1,412	1.3	8,927	7.9	-1,114	-1.0	298	0.3
300's	26,682	28,187	25.1	13,693	12.2	-14,494	-12.9	9,548	8.5	-4,146	-3.7	-18,639	-16.6
400's	12,259	17,371	15.4	17,036	15.1	-335	-0.3	14,889	13.2	-2,147	-1.9	-2,482	-2.2
500's	166	240	0.2	252	0.2	11	0.0	442	0.4	190	0.2	201	0.2
610-630	23,411	16,985	15.1	12,696	11.3	-4,290	-3.8	12,370	11.0	-325	-0.3	-4,615	-4.1
640-650	8,655	8,390	7.5	8,183	7.3	-207	-0.2	7,427	6.6	-755	-0.7	-963	-0.9
700's	0	0	0.0	9	0.0	9	0.0	9	0.0	0	0.0	9	0.0
800's	0	0	0.0	814	0.7	814	0.7	822	0.7	8	0.0	822	0.7
Total	112,490	112,490	100.0	112,490	100.0	0	0.0	112,490	100.0	0	0.0	0	0.0

Note:
1 = All 100 Land Cover Classification Except 160.
2 = All 200 Land Cover Classification Except 210's and 220's.
Adjusted for wetland categorization method (wetlands categorized as other natural areas) from 1975 to 1999 land use

Source: ECT, 2002.

Table 4.26-34 1997 Florida Employment and Wages

Industry	Share of Total Employment	Average Annual Wage
Services	32.8%	$25,800
Retail Trade	20.3%	$16,300
Manufacturing	7.7%	$33,500
Insurance and Real Estate	6.2%	$37,900
Construction	5.2%	$27,300
Mining	0.1%	$39,120
Government	14.5%	$30,100

Source: Florida Department of Labor and Employment

Table 4.26-35 Comparison of Land Use Data for 1975, 2000, 2025 With and Without the Ona Site, and Post-reclamation

Land Use/Cover Classification	1975 % of Total Area	1975-2000 % Change	2000 % of Total Area	2000 - 2025 % Change	2025 % of Total Area
Undeveloped	52	28 % decrease	38	7 % decrease	35
Agricultural	37	25 % increase	46	20 % decrease	35
Urban/Infrastructure	6	95 % increase	12	120 % increase	26
Extractive	5	No change	5	57 % decrease	2