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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION 3804 Coconut Palm Drive Tampa, FL 33619-8318

FAX

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Fax phone: (813) 744-6125

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State of Florida Community Projection
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Tim Ford - Solid Waste



# Department of Environmental Protection

Jeb Bush Governor Southwest District 3804 Coconut Palm Drive Tampa, Florida 33619

David B. Struhs Secretary

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

June 29, 2001

Mr. Jon Larkin Sid Larkin & Son, Inc. P.O. Box 1747 Dade City, FL 33526

Re: Enterprise Class III Landfill - Pasco County
Construction and Operation Permits
Pending Permit Nos.: #177982-001-SC and 177982-002-SO

Dear Mr. Larkin:

The Department is currently evaluating your applications for construction and operation permits. It has been 199 days since your permit applications were initially received. The Department has requested additional information in writing on 2 occasions, and has frequently discussed many items of concern with your consultants. Although responses to both of the Department's letters have been received, some of the same items need clarification as explained in Mr. Morris' June 28<sup>th</sup> memorandum (attached). As a reasonable incentive to avoid unnecessary delays in this process, your permit application is deemed complete as of June 1, 2001 - the date the Department received your response to our last request for additional information.

Therefore, the Department intends to make its decision regarding final disposition (issuance or denial) of the pending permit no later than August 30, 2001, in accordance with Florida Administrative Code (F.A.C.) 62-4.055(5). Your immediate attention to resolving all items in need of clarification would be greatly appreciated. Department staff will be available for review of any supplemental or replacement information you may provide within a reasonable timeframe to allow for issuance of the permit.

June 29, 2001 Page 2

Mr. Jon Larkin Sid Larkin & Son, Inc.

However, as required by F.A.C. 62-4.070(2), if after review of the application and all the information, the Department determines that the applicant-Sid Larkin & Son, Inc. has not provided reasonable assurance that the facility will be operated in accordance with applicable rules, the permit would be denied. If you have any questions, you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.

Ch 1 c\_1

Solid Waste Section
Division of Waste Management

KBF/ab Attachment

cc: Roderick Cashe, P.E., Hartman & Associates
James Golden, P.G., Hartman & Associates
Robert Butera, P.E., FDEP Tampa
Susan Pelz, P.E., FDEP Tampa
John Morris, P.G., FDEP Tampa

## Florida Department of **Environmental Protection**

## Memorandum

TO:

Kim Ford, P.E.

FROM:

John R. Morris, P.G. JPM

DATE:

June 28, 2001

SUBJECT:

Proposed Enterprise Recycling and Disposal Class III Landfill Pending Permit Nos. 177982-001-SC and 177982-002-SO

Hydrogeologic and Monitoring Review Comments

cc:

of GorRobert Butera, P.E.

I have reviewed the following submittals in support of the permit application for the referenced facility that were provided in response to the Department's letter requesting additional information dated May 2, 2001:

3. Request for Additional Information, Dated May 2, 2001, Sid Larkin & Son, Inc., Enterprise Recycling and Disposal Facility, Class III Landfill, Pasco County, Florida, prepared by Hartman & Associates, Inc. (HAI), dated May 18, 2001, received May 21, 2001;

4. Addendum to Response to Request for Additional Information, Dated May 2, 2001, Sid Larkin & Son, Inc., Enterprise Recycling and Disposal Facility, Class III Landfill, Pasco County, Florida, prepared by HAI, dated May 31, 2001, received June 1, 2001; and,

5. Correction to May 29, 2001 Submittal, prepared by HAI, dated June 7, 2001, received via facsimile June 7, 2001.

My review focused on the hydrogeologic and monitoring aspects of the proposed landfill. The comment numbers presented herein are consistent with my memoranda dated January 10, and May 1, 2001, and also reference the above-mentioned submittal numbers. Those comments which have been resolved by these or previously received submittals include the notation: "No additional information is required." However, several comments (presented below in italics) have not been fully addressed and the submitted information is considered not sufficient to support the description of site hydrogeology and the proposed monitoring program for the proposed Enterprise Class III landfill and does not demonstrate compliance with Rules 62-701.410 and 62-701.510, F.A.C., respectively.

## KIM FORD'S REVIEW COMMENTS

## Part B - Disposal Facility General Information

1. B.21., B.22., B.24., and B.25. It is noted that revisions to Chapter 62-701, F.A.C., effective May 27, 2001, change the rule citations for Class III wastes and landfills. The definition of Class III wastes is presented in Rule 62-701.200(14), F.A.C., and the exemption language is presented in Rule 62-701.340(3)(c), F.A.C. It is also noted that the revised rule indicates that it is the applicant who demonstrates that no significant threat to the environment will result from the requested exemption.

Submittal 3 includes statements regarding the applicability of the requested exemption from liner and leachate collection requirements at the subject facility. The following comments address several of these statements:

a. It is indicated that the Department's publication entitled Florida Class III Lined Landfill Leachate Data Summary Report, dated May 18, 2000, includes average concentrations for leachate constituents which are not representative of actual concentrations. Richard Tedder, FDEP Tallahassee at (850) 488-0300, should be contacted to obtain revised leachate average concentrations that include the results for non-detects.

"Protect, Conserve and Manage Florida's Environment and Natural Resources"

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## Memorandum – Enterprise Recycling and Disposal, Class III Landfil. Pending Permit Nos. 177982-001-SC and 177982-002-SO Hydrogeologic and Monitoring Review Comments – RAI Responses

- b. It is indicated that the leachate data for the West Pasco Class III landfill does not exceed FDEP standards or guidance concentrations, with the exception of mercury. The attached table provides a summary of leachate samples collected at the West Pasco Class III landfill for the period from August 1999 to February 2001. It is noted that exceedances of ground water standards were reported for the following sampling events: August 1999 total dissolved solids; February 2000 iron; July 2000 pH, iron, and total dissolved solids; February 2001 iron, total dissolved solids, and benzene.
- c. It is indicated that the Cedar Trail Class III landfill has a similar clay layer and has not experienced any significant ground water exceedances. It is noted that site hydrogeology and the consistency of the emplaced phosphatic clay slimes at the Cedar Trail Class III landfill is considered to be dissimilar to the laterally and vertically variable native sandy clay and clay sediments at the proposed Enterprise Class III landfill. It is also noted that persistent exceedances of standards have been reported for one of the detection wells at Cedar Trail Class III that are not considered to be "naturally occurring".

Submittal 4 includes calculations of dilution for potential pollutants based on rainfall from the upgradient ground water basin from west to east across the site. The following comments address the dilution approach:

- d. It is understood that the area of the region upgradient of Cells 1 and 2 that contribute ground water (A<sub>u</sub>) was based on topography from quadrangle maps for the vicinity of the subject property.

  Documentation of the area upgradient of Cells 1 and 2 was not included in the submittal for review.
- e. The difference in effective porosity between native soils and emplaced wastes is not addressed in the dilution calculation.
- f. The seasonal variability in hydraulic gradient and direction of ground water flow is not addressed in the dilution calculation.
- g. The assumption that all potential pollutants are not present in background (C<sub>b</sub>) is not considered to be valid. The <u>attached</u> table presents water quality data for surficial aquifer wells located within 50 miles of Dade City that are considered to be more representative of background conditions.

It is noted that Department technical staff do not consider the dilution equation and the associated assumptions to adequately describe the transient nature of the surficial aquifer at the subject property. A more detailed analytical solution or a numerical model would be required to characterize potential impacts to ground water quality. However, given the other assurances provided in Submittal 3 regarding control of unauthorized wastes, site hydrogeology, stormwater control, ground water monitoring, and cell certification, the Department is not requesting a more comprehensive demonstration of potential ground water quality impacts in the surficial aquifer for the proposed Enterprise Class III landfill, at this time.

## JOHN MORRIS' REVIEW COMMENTS

Part G - Landfill Construction Requirements (Rule 62-701.400, F.A.C.)

- 1. <u>G.9.a. Gas Control System.</u> This comment was previously addressed. **No additional information is required.**
- 2. <u>G.9.d. Gas Monitoring Program (Rule 62-701.400(10)(c), F.A.C.)</u>
  - a. The revised Gas Monitoring Survey Form presented in Submittal 3 is noted. No additional information is required.
  - b. This comment was previously addressed. No additional information is required.

Memorandum – Enterprise Recycling and Disposal, Class III Landfi... Pending Permit Nos. 177982-001-SC and 177982-002-SO Hydrogeologic and Monitoring Review Comments – RAI Responses

## Part H - Hydrogeological Investigation Requirements (Rule 62-701.410, F.A.C.)

- 3. H.1.b. Rate and Direction of Ground Water Flow (Rule 62-701.410(1)(a)1, F.A.C.).
  - a. The responses provided in Submittal 3 that the inferred contours are not based on actual water level measurements and that the four water level measurement events conducted at the subject property are considered to be representative of seasonal fluctuations are noted. No additional information is required.
  - b. Please respond to the following comments provided regarding the response:
    - i. The response provided in Submittal 3 does not appear to address the response to comment No. 8.e., regarding the occurrence of ground water relative to the top of limestone. It is noted that the elevations reported for P-5 appear to fit on both Figures 11.1 and 14.1, and it is not clear which unit(s) is monitored by P-5.
    - ii. The boring log provided for P-10B (Submittal 3, Appendix 5-A) indicates the boring was completed 55 feet below land surface, while the well completion log for P-10 (Submittal 2, Appendix 5-A) indicates the piezometer was installed to a depth of 75 feet below land surface. It has not been demonstrated what zone is monitored at this location.
    - iii. It is noted that the response provided in Submittal 3 indicates a land surface elevation at P-10 (+129 ft NGVD) that differs from the elevation shown on Figure 11.1. No additional information is required.
    - iv. The boring log provided for P-11B (Submittal 3, Appendix 5-A) is noted. No additional information is required.
    - v. The revision to Figure 6.2 (Submittal 3) is noted. No additional information is required.
    - vi. The revision to the boring log for P-12 (Submittal 3, Appendix 5-A) appears to be inappropriate. The documentation from Universal Engineering Services (UES) regarding the indicated confirmation that the description of "clayey silt with limerock" is analogous to limestone has not been provided. It is also noted that the modification provided to the boring log for P-12 has changed the soil encountered at a depth of 8 feet below land surface described as "yell brn clay sand/sandy cl" to limestone.
    - vii. The revision to the boring log provided for P-1A (Submittal 3, Appendix 5-A) is noted. The documentation from UES regarding the indicated confirmation that the description of "clayey silt with limerock" is analogous to limestone has not been provided.
    - viii. The discussion provided in Submittal 3 regarding anomalous ground water elevations at P-11 is noted. It is also noted that the potentiometric surface contour map provided for water levels measured on May 8, 2001 (Submittal 3, Figure 14.2) incorrectly includes the ground water elevation at P-3A. Revision of Figure 14.2 to exclude data from P-3A will cause substantial changes to the direction of ground water flow.
  - c. This comment was previously addressed. No additional information is required.
  - d. The revisions of slug test analyses for P-2 (slug out), P-3 (slug out), P-3a (slug in), and P-7 (slug out) are noted. Please respond to the following comments provided regarding the slug tests:
    - i. The response provided in Submittal 3 regarding the time scale for the slug in test at P-3 is noted. No additional information is required.
    - ii. The responses provided in Submittal 3 regarding the slug in tests at P-3 and P-7 are noted. No additional information is required.
  - e. The response provided in Submittal 3 regarding the slug out test at P-5 is noted. No additional information is required.

## Memorandum - Enterprise Recycling and Disposal, Class III Landfin Pending Permit Nos. 177982-001-SC and 177982-002-SO Hydrogeologic and Monitoring Review Comments - RAI Responses

- f. The responses provided regarding the results of the slug tests are noted. Please address the following comments:
  - i. The response provided in Submittal 3 indicating an arithmetic mean will be used to average hydraulic conductivity values is noted. No additional information is required.
  - ii. The response provided in Submittal 3 indicating that Section 5.2.2 and Table 5-2 of the Hydrogeological Investigation have been revised to reflect the slug test results provided in Submittal 1 is noted. No additional information is required.
- g. This comment was previously addressed. No additional information is required.
- h. This comment was previously addressed. No additional information is required.
- i. This comment was previously addressed. No additional information is required.
- j. The revision to the ground water velocity calculation provided in Submittal 3 (Section 5.2.2 of the Hydrogeological Investigation) is noted. No additional information is required.
- 4. <u>H.1.c. Background Water Quality (Rule 62-701.410(1)(a)2., F.A.C.).</u> This comment was previously addressed. No additional information is required.
- 5. H.1.e. Site Stratigraphy (Rule 62-701.410(1)(a)4., F.A.C.).
  - a. The response provided in Submittal 3 that individual boring logs for L-12 through L-17 are not available is noted. No additional information is required.
  - b. The response provided in Submittal 3 that all geological work was supervised by Mr. James Golden, P.G., is noted. No additional information is required.
  - c. The response that revised geological cross sections (Figures 5, 6, 6.1 and 6.2) have been provided to distinguish between the clayey sand and sandy clay/clay sediments and that a consistent sandy clay layer underlies the site is noted. Please respond to the comments provided regarding the revised cross sections:
    - i. The response provided in Submittal 3 describing the variability between borings L-13 and DCL01-9 is noted. No additional information is required.
    - ii. The response provided in Submittal 3 describing the revision to Figure 5 depicting the sandy clay/clay layer at boring B-7 and adjacent borings DCL01-9/L-13 is noted. No additional information is required.
    - iii. The response provided in Submittal 3 describing the revision to Figure 5 depicting the top of limestone at boring DCL01-11 is noted. No additional information is required.
    - iv. The response provided in Submittal 3 describing the revision to Figure 6 depicting the land surface elevation at boring B-2 is noted. No additional information is required.
    - v. The response provided in Submittal 3 describing the revision to Figure 6 depicting the sandy clay layer at boring B-8 is noted. No additional information is required.
    - vi. The response provided in Submittal 3 describing the revision to Figure 6.1 depicting the interpolated occurrence of limestone at boring B-15 is noted. No additional information is required.
    - vii. The response provided in Submittal 3 describing the revision to Figure 6.1 depicting the sandy clay layer at boring log DCL01-1 is noted. No additional information is required.
    - viii. The response provided in Submittal 3 describing the procedures to be implemented to ensure that the sandy clay/clay layer in the vicinity of boring DCL01-1 will not be breached is noted. No additional information is required.

## Memorandum - Enterprise Recycling and Disposal, Class III Landfn. Pending Permit Nos. 177982-001-SC and 177982-002-SO Hydrogeologic and Monitoring Review Comments - RAI Responses

- ix. The response provided in Submittal 3 indicating that the revisions to Figure 6.2 reflect review comments Nos. 3.b.ii. through 3.b.v., is noted. No additional information is required.
- d. This comment was previously addressed. No additional information is required.
- e. This comment was previously addressed. No additional information is required.
- 6. <u>H.1.g/H.1.i -- Inventory of Public and Private Wells (Rule 62-701.410(1)(b), F.A.C.).</u> This comment was previously addressed. No additional information is required.

## Part I - Geotechnical Investigation (Rule 62-701.420, F.A.C.)

7. <u>I.1.b. - Lineaments (Rule 62-701.410(2)(b), F.A.C.)</u>. This comment was previously addressed. No additional information is required.

## Part L - Water Quality and Leachate Monitoring (Rule 62-701.510, F.A.C.)

- 8. L.1.c Ground Water Monitoring (Rule 62-701.510(3), F.A.C.).
  - a. The response provided in Submittal 3 indicating when proposed wells MW-1A and MW-14 will be installed and the revision to Section 5.3.1 of the Hydrogeological Investigation is noted. No additional information is required.
  - b. This comment was previously addressed. No additional information is required.
  - c. This comment was previously addressed. No additional information is required.
  - d. The response provided in Submittal 3 indicating that Section 5.3.2.2 of the Hydrogeological Investigation has been revised to clarify the source of historical ground water level data is noted. No additional information is required.
  - e. The response provided in Submittal 3 indicating that Section 5.3.2.2 and Figure 17 have been revised to reflect construction of the Floridan monitor wells with 10 or 15 feet of screen is noted. No additional information is required.
  - f. This comment was previously addressed. No additional information is required.
- 9. L.1.f. Routine Sampling Frequency (Rule 62-701.510(6), F.A.C.).
  - a. The response provided in Submittal 3 indicating that Section 5.4.2 of the Hydrogeological Investigation has been revised to reflect the staggered schedule of monitor well installation is noted. No additional information is required.
  - b. This comment was previously addressed. No additional information is required.
  - c. This comment was previously addressed. No additional information is required.
- 10. <u>L.1.h.</u> Water Quality Monitoring Reports (Rule 62-701.510(9), F.A.C.). This comment was previously addressed. No additional information is required.

Attachments

jrm

## Analytical Results Summary for Leachate Samples Collected at Class I/III/C&D Landfills

Facility Name -- West Pasco Class III Landfill
Analytical Laboratory -- Pasco Co Env Lab (inorganics, metals)
Flowers Lab (organics, metals)

County -- Pasco Approval of Sampling QA Plan -- Y Sampling Frequency -- semi-annually Approval of Analytical QA Plan -- Y

					Leach	ate Sample Ic	lentification I	Number	I	Im 1 1	Tank 2	
	Ground	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Date Sampled
	Water	8/4/99	8/4/99	2/25/00	2/25/00	7/25/00	7/25/00	2/27/01	2/27/01			Data Received
ALD AMETERS	Standard	9/30/99	9/30/99	7/6/00	7/6/00	9/11/00	9/11/00	5/14/01	5/14/01		13/6	Notes
PARAMETERS Tield Measurements	Standard	7,00,11				7.6					4	110.03
	6.5-8.5	6.64	6.85	6.58	6.67	6.41	6.72	6.68	6.68			
pii (bid. cinte)	NE	0.3	3.5	2.4	3.5	1	2.5	0.9	2.5			
Dissolved Oxygen (mg/	NE	1124	208	380	297	698	473	689	660	-		-
Conductivity (printed)	IVL				-							
Metals/Semimetals	0.006	< 0.0002	< 0.0002	0.00232	0.00138	< 0.0001	< 0.0001	< 0.001	0.00271			
Antimony (mg/L)	0.000	0.0235	0.00128	0.0252	0.00372	0.0037	0.00452	0.0479	0.00389			
Arsenic (mg/L)	0.005	0.00006	< 0.00005	< 0.00005	< 0.00005	< 0.0001	< 0.0001	< 0.0001	< 0.0001			
Cadmium (mg/L)		0.0000	0.00523	0.0165	0.00911	0.00578	0.00404	0.0252	0.00516			
Chromium (mg/L)	0.1	0.00448	0.00543	0.00833	0.00639	< 0.0001	0.00204	< 0.001	0.00113	oncerne		
Copper (mg/L)	1 2	0.19	0.22	1.62	4.71	0.42	0.42	0.38	0.5			
Iron (mg/L)	0.3	and the same of th	0.00109	0.00114	0.00348	< 0.0001	< 0.0001	< 0.001	< 0.001			
Lead (mg/L)	0.15	0.00064	< 0.00109	< 0.00114	< 0.0002	0.0006	0.0005	< 0.0005	< 0.0005			
Mercury (mg/L)	0.002	< 0.0002		0.00114	< 0.0007	< 0.0001	< 0.0001	0.00413	0.00493			
Selenium (mg/L)	0.05	0.00177	0.00186	0.00114	0.0016	< 0.00005	< 0.00005	THE RESERVE AND ADDRESS OF THE PARTY OF THE	< 0.0005			
Silver (mg/L)	0.1	0.0009	0.00081	40.2	12.2	17.9	8.47	35.9	22.9			
Sodium (mg/L)	160	20.8	3.67	and the same of th	0.00018	< 0.0001	< 0.0001	< 0.001	< 0.001			
Thallium (mg/L)	0.002	0.00024	< 0.0001	0.00116	0.00018	< 0.0001	< 0.0001	0.00717	0.00744			
Zinc (mg/L)	5	0.0102	0.0192	0.00617	0.00989	< 0.0001	70.0001	0.00.00				
Inorganics			101	170	134	109	124	786	167			
Bicarbonate (mg/L)	NE	311	101		107	3.2	4.4	133	10.24			
Chlorides (mg/L)	250	49.3	8.34	145	5.28	<0.11	9.89	< 0.11	9.91			
Nitrate (mg/L)	10	< 0.11	2.08	< 0.11		2.3	0.55	8.57	4.41			
Total ammonia (mg/L)	NE	3.88	0.21	2.98	0.3	512	424	1670	420			
Total Dissolved Solids (mg/L)	500	600	168	302	282	512,	424	1070	Caconi			
Organics					10.001	-1	<1	1.06	<1			
Benzene (µg/L)	1	< 0.5	< 0.5	< 0.801	< 0.801	<1	<1	<1	<1			
Chlorobenzene (µg/L)	100	< 0.5	< 0.5	< 0.449	< 0.449		<1	<1	<1			
1,2-dichlorobenzene (μg/L)	600	< 0.5	< 0.5	< 0.674	< 0.674	<1	<1	<1	<1			
1,4-dichlorobenzene (μg/L)	75	< 0.5	< 0.5	<1.19	<1.19	<1		<1	<1			
1,2-dichloroethane (μg/L)	3	<1	<1	< 0.642	< 0.642	<1	<1	<1	<1			
1,1-dichloroethene (µg/L)	7	<1	<1	<1.7	<1.7	<1	<1		<1			
Ethylbenzene (μg/L)	700	1.04	< 0.5	< 1.44	< 1.44	<1	<1	<1	<1			Detected in eq. blk. 8/4/9
Methylene chloride (μg/L)	5	3.33	2.76	1	< 0.766	<1	<1	<1				Detected in eq. c.id or its
Naphthalene (μg/L)	6.8*	<1	<1	<2.82	<2.82	3.05	<1	<1	<1			
Tetrachloroethene (μg/L)	3	<1	<1	< 1.46	< 1.46	< 1	<1	<1	<1			
Vinyl Chloride (μg/L)	1	< 0.5	< 0.5	<1.46	<1.46	<1	<1	<1	<1			
Appendix II parameters?	1	No	No	Yes	Yes	No	No	Yes	Yes			

### 6/20/01

Enterprise CI3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER SYSTEM			A1-	N Air	nimum l	ower N	Median L	pper N	Maximum
Parameter Meas.	No.	No.	No.					4-1	/alue
Description Units	Station	Sample	BDLS		:=====:	========			
=======================================	109				0.63	5.24	7.535	11.2	46.51
Depth to Water (from Ise) feet	474			0	-19.66	4.695	6.6304	9.71	137.9
Depth to Water (from mpe) feet	480			0	-264	-19	46.6467	154.575	906
Eh, Field, (hydrogen electrode) mv	102			0	3	18.8	66	112	264.9
Land Surface Elevation (from mse) feet	403			0	0	18.6175	33.39	74.645	210.29
Measuring Point Elevation (from mse feet	350			0	0	1	1	2	5
MicroLanduse Category	449		_	35	0	0.31	0.7	2.425	11.3
Oxygen, Dissolved, Field mg/L	423			0	1	18.4775	36	74.5295	6780
Purge Volume gal	61:			0	11	109.4457	390.5	698.5	48800
Specific Conductance, Field uS/cm	449			12	-21.72	12.03	25.5435	68.59	202.295
Water Level Elevation (from mse) feet	61			0	18	22.8536	24.22	25.27	36.2
Water Temperature øC	22			0	3.85	5.7	6.7	6.99	10.4
pH s.u.	55			12	3.67	5.395	6.55	7.02	9.18
pH, Field s.u.	52		_		0.5	10.4711	110	262.575	1390
Alkalinity, Dissolved (as CaCO3) mg/L	19			4	1	74.016	218.95	287.1717	532
Alkalinity, Total (as CaCO3) mg/L			3	0	37	NSD	NSD	NSD	241
Alkalinity, Total Field (as CaCO3) mg/L	11	-		23	1	17.8834	98.6667	244.4167	630
Bicarbonate Alkalinity, Diss. (as C mg/L	7	_		4	1.5	6.3	25	96	320
Bicarbonate Alkalinity, Total (as C mg/L Bicarbonate, Total (as HCO3) mg/L	13			6	0.05	9.85	32.1	127.0861	
Block berief (	54		0	9	0.22		42.925	98.7923	563
04.0.4	30		4 2	26	0.24	10.04	48.56	105.6556	857
Calcium, Total mg/L Carbonate Alkalinity, Diss. (as CaC mg/L	6	0 7	3	72	0.05		1.5	2.525	5
Carbonate Alkalinity, Total (as CaC mg/L	4	.4 4	4	37	0		0.5	0.5	1.5
Carbonate, Total (as CO3) mg/L	9	9 10	6	79	0		0.05	0.05	70
Chloride, Dissolved mg/L	54	1 253	2	11	1.3		16.5	50.3333	19000
Chloride, Total mg/L	29	)4 84		3	0.5		21.675	55.8	8520
Color Pt-Co	30	0 34	.7	13	2.5	_	60	150	4500
Fluoride, Dissolved mg/L	53	37 243	11 12	13	0.025		0.1033	0.25	2.8667
Fluoride, Total mg/L	29	5 87	7 1	68	0.008		0.18	0.3768	2.965 3705.824
Hardness, Noncarbonate mg/L	25	50 78	35	0	0.8018		16.944	48.3181	
Hardness, Total mg/L	38	32 174		5.	0.2		178.468		3927.77
Magnesium, Dissolved mg/L	58	37 <sup>-</sup> 316	30	77	0.1212		3.35	9.4781	1180 401
Magnesium, Total mg/L	19	91 25		3	0.05		2.9	7.705	
Organic Carbon, Dissolved mg/L	1.	48 16		15	0.5			13 21	
Organic Carbon, Total mg/L	5	78 16 <u>4</u>	14 1	181	0.05		10.0625		
Oxygen, Dissolved mg/L		6	6	0	)		1 10		
Potassium, Dissolved mg/L	5	40 25	28 1	150	0.0415			3.0927 3.179	
Potassium, Total mg/L	3	04 8	B5	6	0.0				
Silicate, Total mg/L		2	2	0	16				
Sodium Absorption Ratio	3	28 - 11		0	0.0212				
Sodium Percent	3	21 10	85	0	0.730				
Sodium+Potassium mg/L	3	18 10		0	1.48				
Sodium, Dissolved mg/L	5	41 25		1	0.6				
Sodium, Total mg/L	3	.03 8	82	2	0.				
Specific Conductance .uS/cm	5		38	1	1:				
Specific Conductance, QA uS/cm	3	84 13	15	0	2		364.3334		
Sulfate, Dissolved mg/L	5			283	0.				
Sulfate, Total mg/L	2			196	0.0				2 26.7
Sulfide Odor	2	93 5	22	0		0 NSI			
Sulfide, Total mg/L	4			363	0.01				
Total Dissolved Solids (TDS measure mg/L	;		35	1	1.3				
Total Dissolved Solids (TDS-calcula mg/L		264 3	333	0		4 84.814			
Total Suspended Solids (TSS) mg/L		17	19	0	8.20				
Turbidity ntu	:		243	35	0.0				
Turbidity, Field ntu		35 1	196	0	0.00				
Turbidity, Lab ntu		30	31	0	2	.4 1	6 30.2	5 11	3100
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Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER SYS	STEM			<b>5.1</b>	Minimum	Lower	Median I	Jpper I	Maximum
Parameter	Meas.	No.	No.	No.	Minimum Value	Lower Quartile		1 1	Value
Description	Units	Station	Sample	BDLS			=======		
=======================================		======== 181		0	3.87	6.14	6.84	7.18	11.24
pH, Lab	S.U.	497			7.2	17.5	32	108	13770
Aluminum, Dissolved	ug/L	196			5		127.5	732.5	45769
Aluminum, Suspended	ug/L	447					264.5	949	237000
Aluminum, Total	ug/L	68			0.1	0.2	1	1.245	7.6
Antimony, Dissolved	ug/L	292					0.2	0.75	5.5
Antimony, Total	ug/L	258					1.49	3	30.15
Arsenic, Dissolved	ug/L `ug/L	561					1	2.6667	213.3333
Arsenic, Total	ug/L	499				8.9381	18.7	31.1	131
Barium, Dissolved Barium, Suspended	ug/L	187			50	50	50	50	408
Barium, Total	ug/L	517		212	0.05	9.845	18	36.8	845.5333
	ug/L	258			0.03	0.1	0.15	0.2	1
Beryllium, Dissolved Beryllium, Total	ug/L	292			0.01	0.2	0.25	0.25	4
•	ug/L	384			0.0025	0.04	0.1	0.25	31.025
Cadmium, Dissolved	ua/l	546			0.01	0.26	0.4475	0.6667	84
Cadmium, Total	ug/L ug/L	449			0.005	1.7433	2.5	2.8333	23
Chromium, Dissolved	ug/L	6:			0.5	0.5	i 1	2	82
Chromium, Suspended	ug/L	56:	-		0.1	2.0333	3.8667	6.5	935.7
Chromium, Total	ug/L	2:			7 0.2	2 0.2	0.2	0.2	0.89
Cobalt, Dissolved Cobalt, Total	ug/L	11			3 0.2	2 0.2	0.2	5	50
	ug/L	50		805	0.015	2.3698	3.225	5	839
Copper, Dissolved Copper, Suspended	ug/L	3		5 <b>1</b> 1	0.5	5 3	9.5	20	620
Copper, Total	ug/L	56		1 692	0.1935	5 2.75	5 5	9.0625	747.5
Iron, Dissolved	ug/L	58		5 365	5 1.5	48.8667	387.5	1417.241	40700
	ug/L	31		3 19	0.2	2 70		1500	46100
Iron, Suspended Iron, Total	ug/L	. 56		7 24	4 5	5 315	1296.5	4379.167	144717
Lead, Dissolved	ug/L	51	3 117	0 880	0.0	0.3625		1	2240
Lead, Suspended	ug/L	25	2 31	3 32	2 0.5			20.25	7370
Lead, Total	ug/L	56	3 146	4 344	4 0.05	5 1.435	5 5.575	19.3934	3750
Manganese, Dissolved	ug/L	50	7 157	3 304	4 0.014	4 !	5 11.4	27.875	
Manganese, Suspended	ug/L	17	8 19	6 11:	3 0.5	5 0.9	5 0.5		
Manganese, Total	ug/L	56		0 15	9 0.3	3	7 14.975	42.425	
Mercury, Dissolved	ug/L	17	0 21	9 20	7 0.000	0.050		0.1	1.5001
Mercury, Total	ug/L	54	0 110	7 92	4 0.0	5 0.0	5 0.05		
Nickel, Dissolved	ug/L	48	2 91	2 82	9 0.0	3 2.51			
Nickel, Suspended	ug/L	3	3 3	7 2	8 0.	5 0.			
Nickel, Total	ug/L	46	5 80	3 68	6 0.3	5 ;	3 4.3333		
Selenium, Dissolved	ug/L	• 20	5 26	1 22	2 0.00	5	1 1		
Selenium, Total	ug/L	50	1 99	9 90	4 0.	5 0.	5 0.75		
Silver, Dissolved	ug/L	41	6 68	7 65	6 0.01	5 0.262			
Silver, Suspended	ug/L	2	23 2	4 2	2 0.				
Silver, Total	ug/L	51		7 88	2 0.0				
Strontium, Dissolved	ug/L	58			1 1.		5 238.7857		
Strontium, Suspended	ug/L	15	58 17	2 12	1	5	5 5		
Strontium, Total	ug/L	47			.7	2 37.316	7 219	677.3333	
Thallium, Dissolved	ug/L				3 0.0	1 0.02			
Thallium, Total	ug/L ·	. 29	92 31	7 26	3 0.00	5 0.0	2 0.025	0.05	
Vanadium, Dissolved	ug/L		92 31	9 21	9 0.	2	1 1		
Vanadium, Total	ug/L		92 31	7 17	7 0.2	5	1 2		
•	ug/L		07 158		7 0.1	2	4 8	19.9773	3281.667
Zinc, Dissolved			60 17		7	5	5 5	21.5	14190
Zinc, Suspended	ug/L ug/L		57 <b>14</b> 6			1 8.	5 18	42.3333	25800
Zinc, Total	•				5 0.00		5 0.005		
Cyanide, Dissolved	mg/L		80 20					0.005	0.0233
Cyanide, Total	mg/L		99 104						2 27
Ammonia+Organic Nitro				03	0 0.025				4.8938
Ammonia, Dissolved (As			74 17						
Ammonia, Dissolved (as	s N) mg/L	3		• • • • • • • • • • • • • • • • • • • •					

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Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER SYSTEM					1	Mandian	llana.	N 4
Parameter Meas.	No.	No.	No.		Lower	Median	• •	Maximum
Description Units	Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
		. ======	6	0.005	0.0625	0.285	0.555	2.4
Ammonia, Total (as N) mg/L	28 48			0.003	0.0023	0.4414		146.2432
Nitrate+Nitrite, Dissolved (As NO3) mg/L					0.013			30
Nitrate+Nitrite, Dissolved (as N) mg/L	539				0.015	0.03		33.91
Nitrate+Nitrite, Total (as N) mg/L	267				0.0057			3.175
Nitrate, Dissolved (as N) mg/L	27							6.1112
Nitrate, Total (as N) mg/L	153							0.045
Nitrate, Total (as NO3) mg/L	. 1							
Nitrite, Dissolved (as N) mg/L	20						0.01	0.0167
Nitrite, Total (as N) mg/L	116							0.1993
Nitrogen, Dissolved mg/L	118							34
Organic Nitrogen, Dissolved mg/L	193							4.46
Orthophosphate, Dissolved (as P) mg/L	547							9.9
Orthophosphate, Dissolved (as PO4) mg/L	1							0.092
Orthophosphate, Total (as P) mg/L	101							1.815
Phosphate, Total mg/L	81							1.39
Phosphorus, Dissolved (as P) mg/L	520							111
Phosphorus, Total (as P) mg/L	68							1.4498
Silica, Dissolved mg/L	580							88
1,1,1-Trichloroethane ug/L	477							
1,1,2,2-Tetrachloroethane ug/L	473							64.125
1,1,2-Trichloroethane ug/L	479							8.5833
1,1-Dichloroethane ug/L	479							
1,1-Dichloroethene ug/L	479							9.625
1,1-Dichloropropane ug/L	2:							0.25
1,2-Dibromo-3-chloropropane (DBCP) ug/L	39	9 43						0.5
1,2-Dibromoethane (EDB) ug/L	198	3 498	3 498					
1,2-Dichlorobenzene ug/L	473	3 1251	1247					8.5833
1,2-Dichloroethane ug/L	47	9 1245	5 1244	0.25				8.5833
1,2-Dichloroethene (cis) ug/L	14:	2 412	2 412	0.25	2.5	2.5		
1,2-Dichloroethene (trans) ug/L	47	9 1219	1219	0.25	0.25	0.25	0.5	8.5833
1,2-Dichloropropane ug/L	47:	9 1245	1241	0.25	0.25	0.25	0.625	8.5833
1,3-Dichlorobenzene ug/L	46	7 1227	7 1227	7 0.25	0.25	0.3125	2.625	8.5833
1,3-Dichloropropene ug/L	15				0.25	0.25	0.25	10
1,3-Dichloropropene (cis) ug/L	46				0.25	0.25	1.6719	12.75
1,3-Dichloropropene (trans) ug/L	46				0.25	0.25	1.5921	8.5833
1,4-Dichlorobenzene ug/L	46						2.625	8.5833
2,4,5-TP (Silvex) ug/L	6					0.001	0.001	0.025
	8							
	2							
2,4-DB ug/L	47							
2-Chloroethylvinyl ether ug/L				7 5				
2378-Tetrachlorodibenzo-P-Dioxin (T ug/L								2.5
3-Hydroxycarbofuran ug/L	29							
Acrolein ug/L	4							
Acrylonitrile ug/L	4							
Alachior ug/L	30							
Aldicarb ug/L	30							
Aldicarb sulfone ug/L	29							
Aldicarb sulfoxide ug/L	29	5 33	4 334			'		
Aldrin ug/L	32	5 41	9 419					
Ametryne ug/L		1	1 '	1 0.013				
Atrazine ug/L	30	7 35	7 35	5 0.0133	3 0.024			
BHC, Alpha ug/L	30	2 38	7 38	7 0.004	7 0.0048	0.004	3 0.0049	3.335
BHC, Beta ug/L	30			1 0.0042	0.0048	0.0048	0.0052	
BHC, Delta ug/L	30				0.0048	3 0.0048	0.0049	2.1683
BHC, Gamma (Lindane) ug/L	32					3 0.004	0.0049	3.335
Benfluralin ug/L		2 2						
	47							
Benzene ug/L	71				-,-			

### 6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER S				A.I	Minimum	Lower	Madian	Linnor	Maximum
Parameter	Meas.	No.	No.	No.	Minimum	Lower	Median	Upper	
Description	Units	Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
		307		343		0.145			
Bromacil	ug/L	479		1245		0.25			
Bromodichloromethane	ug/L	479				0.25			
Bromoform	ug/L								
Bromomethane	ug/L	409							
Captan	ug/L	1							
Carbaryl	ug/L	296							
Carbofuran	ug/L	306							
Carbon tetrachloride	ug/L	479				0.25			
Carbophenothion (Trithio	-	1				NSD			
Chlordane	ug/L	329		411					
Chlorobenzene	ug/L	479							
Chlorobenzilate	ug/L	295							
Chloroethane	ug/L	479							
Chloroform	ug/L	479							
Chloromethane	ug/L	479							
Chloropicrin	້ ug/L	37				0.001			
Chlorothalonil (Bravo)	ug/L	22							
Chlorotoluene	ug/L	31	34	34	0.25				
Chlorpyrifos	ug/L	298	337	337	0.005	0.0475			
DDD (p,p')	ug/L	329	438	438	0.005	0.0095	0.0095	0.01	
DDE (p,p')	ug/L	329	438	438	0.002	0.0095	0.0095		
DDT (p,p')	ug/L	329	450	450	0.005	0.0098	0.0145	0.0145	2.675
Dacthal (DCPA)	ug/L	15	5 15	1.5	0.025	0.25	0.25	0.25	0.25
Demeton	ug/L	7	7 7	. 7	0.5	0.5	0.5	0.5	0.5
Diazinon	ug/L	302	350	344	0.005	0.0475	0.0479	0.0485	1.8
Dibromochloromethane	ug/L	479		1245	0.25	0.25	0.25	0.5	8.5833
Dicamba	ug/L	22			2.5	2.5	2.5	2.5	2.5
Dichloran	ug/L	-			0.002	NSD	) NSD	NSE	0.002
Dichlorobenzene	ug/L	119				2.5	5 2.5	2.5	2.5
Dichlorodifluoromethane	<u> </u>	283					0.5	2.5	5
	ug/L	22							0.01
Dicofol (Kelthane)	ug/L	329							
Dieldrin		298							
Disulfoton	ug/L	307							
Diuron	ug/L	329							
Endosulfan I	ug/L								
Endosulfan II	ug/L	302							
Endosulfan sulfate	ug/L	302							
Endrin	ug/L	330							
Endrin aldehyde	ug/L	302							
Ethion	ug/L	298							
Ethoprop	ug/L	30							
Ethyl Parathion	ug/L	66							
Ethylbenzene	ug/L	47:							
Fenamiphos	ug/L	30	7 357	7 356					
Heptachlor	ug/L	32	9 412	2 412	0.0015	0.0048	0.0048	0.0049	5
Heptachlor epoxide	ug/L	32	9 413	3 412	0.0047	0.0095	0.0095	0.0115	5 5
Hexazinone	ug/L	30	7 356	351	0.05	0.095	0.095	0.1	1.3
Imidacloprid	ug/L	27		I 311	1 0.2	2 0.2	2 0.2	2 0.2	2 0.2
Iprodione	æg/L	27			0.375	0.38	0.385	0.39	0.48
Isodrin	ug/L	27					0.0095	0.0095	0.012
		29							
Isofenphos	ug/L	27							
Linuron	ug/L	28							
Malathion	ug/L				-				
Metalaxyl	ug/L	29							
Metam Sodium	ug/L	1					1 1.5		1 1
Methamidophos	ug/L	2							1 24.75
Methomyl	ug/L	30	6 57	5 574	4 0.	,	1 '	1	. 24.13

6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

Parameter	Meas.	No.	No.	No.	Minimum	Lower	Median	Upper	Maximum
Description	Units	Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
=======================================				======					
Methoxychlor	ug/L	311	•	384					0.0878
Methyl Azinphos (Guth		283							1
Methyl Parathion	ug/L	298		338					0.06
Methyl tert-Butyl Ether		31							5
Methylene chloride	ug/L	479							8.5833
Methylisothiocyanate (	MITC) ug/L	22							37.5
Metolachior	ug/L	278		311	0.235				0.3
Metribuzin	ug/L	307							0.25
Mevinphos	ug/L	298							
Mirex	ug/L	66							0.015
Naled	ug/L	298							0.48
Norflurazon	ug/L	298							3.2
Oxamyl	ug/L	306							
PCNB	ug/L	276							0.012
Pendimethalin	ug/L	22							1
Permethrin	=ug/L	22	25						0.5
Perthane	ug/L	1		1					0.1
Phorate	æg/L	278							0.06
Picloram	ug/L	22							0.01
Prometon	ug/L	218							0.12
Prometryn	ug/L	298							0.5
Propazine	ug/L	21							
Propoxur	ug/L	296							
Simazine	ug/L	307							
Strobane	ug/L	1	•						
Styrene	ug/L	38							
Tebuthiuron (GRASLA	N, SPIKE) ug/L	218							
Terbufos	ug/L	298	337	337					
Terbuthylazine	ug/L	• 1	1	1	0.1	NSD	) NSC	NSD	0.1
Terbutryn	ug/L	· 1	1	1	0.025	NSD	) NSE	NSD	0.025
Tetrachloroethene	ug/L	479	1271	1270	0.25	0.25	0.25	0.625	8.5833
Toluene	ug/L	473	1223	1167	0.25	0.25	0.3125	1.375	45.3725
Toxaphene	ug/L	330	418	418	0.0375	0.355	0.355	0.365	366.6667
Triademefon	ug/L	298	337	337	0.1133	0.12	0.12	0.125	0.5
Trichloroethene	ug/L	479	1227	1226	0.25	0.25	0.25	0.5275	8.5833
Trichlorofluoromethane	-	452	1088	1077	0.25	0.25	0.3417	1.5679	8.5833
Trifluralin	ug/L	22			0.005	0.005	0.005	0.005	0.005
Trimethylbenzene	ug/L	7		7	2.5	2.5	2.5	2.5	2.5
Vinyl Chloride	ug/L	479							8.5833
Xylenes	ug/L	403							
Aylelles	ug/L	400	, 093	500	0.20	0.20	0.20	0.20	12.020

NOTE: Data from different water bodies we NOTE: Values below detection limit were t NOTE: Multiple values at a single station

NOTE: Multiple values at a single station NOTE: Upper and lower quartiles estimated NOTE: NSD indicates insufficient data for

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## Memorandum

## Florida Department of **Environmental Protection**

TO:

Kim Ford, P.E.

FROM:

John R. Morris, P.G. JPM

DATE:

June 28, 2001

**SUBJECT:** 

Proposed Enterprise Recycling and Disposal Class III Landfill

Pending Permit Nos. 177982-001-SC and 177982-002-SO

Hydrogeologic and Monitoring Review Comments

cc:

Robert Butera, P.E.

I have reviewed the following submittals in support of the permit application for the referenced facility that were provided in response to the Department's letter requesting additional information dated May 2, 2001:

- 3. Request for Additional Information, Dated May 2, 2001, Sid Larkin & Son, Inc., Enterprise Recycling and Disposal Facility, Class III Landfill, Pasco County, Florida, prepared by Hartman & Associates, Inc. (HAI), dated May 18, 2001, received May 21, 2001;
- 4. Addendum to Response to Request for Additional Information, Dated May 2, 2001, Sid Larkin & Son, Inc., Enterprise Recycling and Disposal Facility, Class III Landfill, Pasco County, Florida, prepared by HAI, dated May 31, 2001, received June 1, 2001; and,
- 5. Correction to May 29, 2001 Submittal, prepared by HAI, dated June 7, 2001, received via facsimile June 7, 2001.

My review focused on the hydrogeologic and monitoring aspects of the proposed landfill. The comment numbers presented herein are consistent with my memoranda dated January 10, and May 1, 2001, and also reference the above-mentioned submittal numbers. Those comments which have been resolved by these or previously received submittals include the notation: "No additional information is required." However, several comments (presented below in *italics*) have not been fully addressed and the submitted information is considered <u>not sufficient</u> to support the description of site hydrogeology and the proposed monitoring program for the proposed Enterprise Class III landfill and does not demonstrate compliance with Rules 62-701.410 and 62-701.510, F.A.C., respectively.

## KIM FORD'S REVIEW COMMENTS

## Part B - Disposal Facility General Information

1. <u>B.21.</u>, <u>B.22.</u>, <u>B.24.</u>, and <u>B.25.</u> It is noted that revisions to Chapter 62-701, F.A.C., effective May 27, 2001, change the rule citations for Class III wastes and landfills. The definition of Class III wastes is presented in Rule 62-701.200(14), F.A.C., and the exemption language is presented in Rule 62-701.340(3)(c), F.A.C. It is also noted that the revised rule indicates that it is the applicant who demonstrates that no significant threat to the environment will result from the requested exemption.

Submittal 3 includes statements regarding the applicability of the requested exemption from liner and leachate collection requirements at the subject facility. The following comments address several of these statements:

a. It is indicated that the Department's publication entitled Florida Class III Lined Landfill Leachate Data Summary Report, dated May 18, 2000, includes average concentrations for leachate constituents which are not representative of actual concentrations. Richard Tedder, FDEP Tallahassee at (850) 488-0300, should be contacted to obtain revised leachate average concentrations that include the results for non-detects.

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- b. It is indicated that the leachate data for the West Pasco Class III landfill does not exceed FDEP standards or guidance concentrations, with the exception of mercury. The attached table provides a summary of leachate samples collected at the West Pasco Class III landfill for the period from August 1999 to February 2001. It is noted that exceedances of ground water standards were reported for the following sampling events: August 1999 total dissolved solids; February 2000 iron; July 2000 pH, iron, and total dissolved solids; February 2001 iron, total dissolved solids, and benzene.
- c. It is indicated that the Cedar Trail Class III landfill has a similar clay layer and has not experienced any significant ground water exceedances. It is noted that site hydrogeology and the consistency of the emplaced phosphatic clay slimes at the Cedar Trail Class III landfill is considered to be dissimilar to the laterally and vertically variable native sandy clay and clay sediments at the proposed Enterprise Class III landfill. It is also noted that persistent exceedances of standards have been reported for one of the detection wells at Cedar Trail Class III that are not considered to be "naturally occurring".

Submittal 4 includes calculations of dilution for potential pollutants based on rainfall from the upgradient ground water basin from west to east across the site. The following comments address the dilution approach:

- d. It is understood that the area of the region upgradient of Cells 1 and 2 that contribute ground water (A<sub>u</sub>) was based on topography from quadrangle maps for the vicinity of the subject property. Documentation of the area upgradient of Cells 1 and 2 was not included in the submittal for review.
- e. The difference in effective porosity between native soils and emplaced wastes is not addressed in the dilution calculation.
- f. The seasonal variability in hydraulic gradient and direction of ground water flow is not addressed in the dilution calculation.
- g. The assumption that all potential pollutants are not present in background (C<sub>b</sub>) is not considered to be valid. The <u>attached</u> table presents water quality data for surficial aquifer wells located within 50 miles of Dade City that are considered to be more representative of background conditions.

It is noted that Department technical staff do not consider the dilution equation and the associated assumptions to adequately describe the transient nature of the surficial aquifer at the subject property. A more detailed analytical solution or a numerical model would be required to characterize potential impacts to ground water quality. However, given the other assurances provided in Submittal 3 regarding control of unauthorized wastes, site hydrogeology, stormwater control, ground water monitoring, and cell certification, the Department is not requesting a more comprehensive demonstration of potential ground water quality impacts in the surficial aquifer for the proposed Enterprise Class III landfill, at this time.

### JOHN MORRIS' REVIEW COMMENTS

Part G – Landfill Construction Requirements (Rule 62-701.400, F.A.C.)

- 1. <u>G.9.a. Gas Control System.</u> This comment was previously addressed. **No additional information is required.**
- 2. G.9.d. Gas Monitoring Program (Rule 62-701.400(10)(c), F.A.C.)
  - a. The revised Gas Monitoring Survey Form presented in Submittal 3 is noted. **No additional information is required.**
  - b. This comment was previously addressed. No additional information is required.

## Part H - Hydrogeological Investigation Requirements (Rule 62-701.410, F.A.C.)

- 3. H.1.b. Rate and Direction of Ground Water Flow (Rule 62-701.410(1)(a)1, F.A.C.).
  - a. The responses provided in Submittal 3 that the inferred contours are not based on actual water level measurements and that the four water level measurement events conducted at the subject property are considered to be representative of seasonal fluctuations are noted. No additional information is required.
  - b. Please respond to the following comments provided regarding the response:
    - i. The response provided in Submittal 3 does not appear to address the response to comment No. 8.e., regarding the occurrence of ground water relative to the top of limestone. It is noted that the elevations reported for P-5 appear to fit on both Figures 11.1 and 14.1, and it is not clear which unit(s) is monitored by P-5.
    - ii. The boring log provided for P-10B (Submittal 3, Appendix 5-A) indicates the boring was completed 55 feet below land surface, while the well completion log for P-10 (Submittal 2, Appendix 5-A) indicates the piezometer was installed to a depth of 75 feet below land surface. It has not been demonstrated what zone is monitored at this location.
    - iii. It is noted that the response provided in Submittal 3 indicates a land surface elevation at P-10 (+129 ft NGVD) that differs from the elevation shown on Figure 11.1. No additional information is required.
    - iv. The boring log provided for P-11B (Submittal 3, Appendix 5-A) is noted. No additional information is required.
    - v. The revision to Figure 6.2 (Submittal 3) is noted. No additional information is required.
    - vi. The revision to the boring log for P-12 (Submittal 3, Appendix 5-A) appears to be inappropriate. The documentation from Universal Engineering Services (UES) regarding the indicated confirmation that the description of "clayey silt with limerock" is analogous to limestone has not been provided. It is also noted that the modification provided to the boring log for P-12 has changed the soil encountered at a depth of 8 feet below land surface described as "yell brn clay sand/sandy cl" to limestone.
    - vii. The revision to the boring log provided for P-1A (Submittal 3, Appendix 5-A) is noted. The documentation from UES regarding the indicated confirmation that the description of "clayey silt with limerock" is analogous to limestone has not been provided.
    - viii. The discussion provided in Submittal 3 regarding anomalous ground water elevations at P-11 is noted. It is also noted that the potentiometric surface contour map provided for water levels measured on May 8, 2001 (Submittal 3, Figure 14.2) incorrectly includes the ground water elevation at P-3A. Revision of Figure 14.2 to exclude data from P-3A will cause substantial changes to the direction of ground water flow.
  - c. This comment was previously addressed. No additional information is required.
  - d. The revisions of slug test analyses for P-2 (slug out), P-3 (slug out), P-3a (slug in), and P-7 (slug out) are noted. Please respond to the following comments provided regarding the slug tests:
    - i. The response provided in Submittal 3 regarding the time scale for the slug in test at P-3 is noted. No additional information is required.
    - ii. The responses provided in Submittal 3 regarding the slug in tests at P-3 and P-7 are noted. No additional information is required.
  - e. The response provided in Submittal 3 regarding the slug out test at P-5 is noted. No additional information is required.

- f. The responses provided regarding the results of the slug tests are noted. Please address the following comments:
  - i. The response provided in Submittal 3 indicating an arithmetic mean will be used to average hydraulic conductivity values is noted. **No additional information is required.**
  - ii. The response provided in Submittal 3 indicating that Section 5.2.2 and Table 5-2 of the Hydrogeological Investigation have been revised to reflect the slug test results provided in Submittal 1 is noted. No additional information is required.
- g. This comment was previously addressed. No additional information is required.
- h. This comment was previously addressed. No additional information is required.
- i. This comment was previously addressed. No additional information is required.
- j. The revision to the ground water velocity calculation provided in Submittal 3 (Section 5.2.2 of the Hydrogeological Investigation) is noted. No additional information is required.
- 4. <u>H.1.c. Background Water Quality (Rule 62-701.410(1)(a)2., F.A.C.).</u> This comment was previously addressed. **No additional information is required.**
- 5. <u>H.1.e.</u> Site Stratigraphy (Rule 62-701.410(1)(a)4., F.A.C.).
  - a. The response provided in Submittal 3 that individual boring logs for L-12 through L-17 are not available is noted. No additional information is required.
  - b. The response provided in Submittal 3 that all geological work was supervised by Mr. James Golden, P.G., is noted. No additional information is required.
  - c. The response that revised geological cross sections (Figures 5, 6, 6.1 and 6.2) have been provided to distinguish between the clayey sand and sandy clay/clay sediments and that a consistent sandy clay layer underlies the site is noted. Please respond to the comments provided regarding the revised cross sections:
    - i. The response provided in Submittal 3 describing the variability between borings L-13 and DCL01-9 is noted. No additional information is required.
    - ii. The response provided in Submittal 3 describing the revision to Figure 5 depicting the sandy clay/clay layer at boring B-7 and adjacent borings DCL01-9/L-13 is noted. No additional information is required.
    - iii. The response provided in Submittal 3 describing the revision to Figure 5 depicting the top of limestone at boring DCL01-11 is noted. No additional information is required.
    - iv. The response provided in Submittal 3 describing the revision to Figure 6 depicting the land surface elevation at boring B-2 is noted. No additional information is required.
    - v. The response provided in Submittal 3 describing the revision to Figure 6 depicting the sandy clay layer at boring B-8 is noted. No additional information is required.
    - vi. The response provided in Submittal 3 describing the revision to Figure 6.1 depicting the interpolated occurrence of limestone at boring B-15 is noted. No additional information is required.
    - vii. The response provided in Submittal 3 describing the revision to Figure 6.1 depicting the sandy clay layer at boring log DCL01-1 is noted. No additional information is required.
    - viii. The response provided in Submittal 3 describing the procedures to be implemented to ensure that the sandy clay/clay layer in the vicinity of boring DCL01-1 will not be breached is noted. No additional information is required.

- ix. The response provided in Submittal 3 indicating that the revisions to Figure 6.2 reflect review comments Nos. 3.b.ii. through 3.b.v., is noted. No additional information is required.
- d. This comment was previously addressed. No additional information is required.
- e. This comment was previously addressed. No additional information is required.
- 6. <u>H.1.g/H.1.i -- Inventory of Public and Private Wells (Rule 62-701.410(1)(b), F.A.C.).</u> This comment was previously addressed. **No additional information is required.**

### Part I - Geotechnical Investigation (Rule 62-701.420, F.A.C.)

7. <u>I.1.b.</u> – <u>Lineaments (Rule 62-701.410(2)(b), F.A.C.).</u> This comment was previously addressed. **No additional information is required.** 

#### Part L - Water Quality and Leachate Monitoring (Rule 62-701.510, F.A.C.)

- 8. <u>L.1.c Ground Water Monitoring (Rule 62-701.510(3), F.A.C.).</u>
  - a. The response provided in Submittal 3 indicating when proposed wells MW-1A and MW-14 will be installed and the revision to Section 5.3.1 of the Hydrogeological Investigation is noted. No additional information is required.
  - b. This comment was previously addressed. No additional information is required.
  - c. This comment was previously addressed. No additional information is required.
  - d. The response provided in Submittal 3 indicating that Section 5.3.2.2 of the Hydrogeological Investigation has been revised to clarify the source of historical ground water level data is noted. No additional information is required.
  - e. The response provided in Submittal 3 indicating that Section 5.3.2.2 and Figure 17 have been revised to reflect construction of the Floridan monitor wells with 10 or 15 feet of screen is noted. No additional information is required.
  - f. This comment was previously addressed. No additional information is required.
- 9. <u>L.1.f.</u> Routine Sampling Frequency (Rule 62-701.510(6), F.A.C.).
  - a. The response provided in Submittal 3 indicating that Section 5.4.2 of the Hydrogeological Investigation has been revised to reflect the staggered schedule of monitor well installation is noted. No additional information is required.
  - b. This comment was previously addressed. No additional information is required.
  - c. This comment was previously addressed. No additional information is required.
- 10. <u>L.1.h.</u> Water Quality Monitoring Reports (Rule 62-701.510(9), F.A.C.). This comment was previously addressed. No additional information is required.

Attachments

jrm

## Analytical Results Summary for Leachate Samples Collected at Class I/III/C&D Landfills

Facility Name -- West Pasco Class III Landfill
Analytical Laboratory -- Pasco Co Env Lab (inorganics,metals)
Flowers Lab (organics,metals)

County -- Pasco Approval of Sampling QA Plan -- Y Sampling Frequency -- semi-annually Approval of Analytical QA Plan -- Y

			I	I=	1	nate Sample I			Im	Im 1.4	Im 1.0	_
	Ground	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	D 0 1 1
	Water	8/4/99	8/4/99	2/25/00	2/25/00	7/25/00	7/25/00	2/27/01	2/27/01			Date Sampled
PARAMETERS	Standard	9/30/99	9/30/99	7/6/00	7/6/00	9/11/00	9/11/00	5/14/01	5/14/01			Data Received
Field Measurements										-		Notes
pH (Std. Units)	6.5-8.5	6.64	6.85	6.58	6.67	6.41	6.72	6.68	6.68			
Dissolved Oxygen (mg/L)	NE	0.3	3.5	2.4	3.5	1	2.5	0.9	2.5			
Conductivity (µmhos/cm)	NE	1124	208	380	297	698	473	689	660			
Metals/Semimetals												
Antimony (mg/L)	0.006	< 0.0002	< 0.0002	0.00232	0.00138	< 0.0001	< 0.0001	< 0.001	0.00271			
Arsenic (mg/L)	0.05	0.0235	0.00128	0.0252	0.00372	0.0037	0.00452	0.0479	0.00389			
Cadmium (mg/L)	0.005	0.00006	< 0.00005	< 0.00005	< 0.00005	< 0.0001	< 0.0001	< 0.0001	< 0.0001			
Chromium (mg/L)	0.1	0.014	0.00523	0.0165	0.00911	0.00578	0.00404	0.0252	0.00516			
Copper (mg/L)	1	0.00448	0.00543	0.00833	0.00639	< 0.0001	0.00204	< 0.001	0.00113			
Iron (mg/L)	0.3	0.19	0.22	1.62	4.71	0.42	0.42	0.38	0.5			
Lead (mg/L)	0.15	0.00064	0.00109	0.00114	0.00348	< 0.0001	< 0.0001	< 0.001	< 0.001			
Mercury (mg/L)	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0006	0.0005	< 0.0005	< 0.0005			
Selenium (mg/L)	0.05	0.00177	0.00186	0.00114	< 0.0007	< 0.0001	< 0.0001	0.00413	0.00493			
Silver (mg/L)	0.1	0.0009	0.00081	0.00037	0.0016	< 0.00005	< 0.00005	< 0.0005	< 0.0005			
Sodium (mg/L)	160	20.8	3.67	40.2	12.2	17.9	8.47	35.9	22.9			
Thallium (mg/L)	0.002	0.00024	< 0.0001	0.00116	0.00018	< 0.0001	< 0.0001	< 0.001	< 0.001			
Zinc (mg/L)	5	0.0102	0.0192	0.00617	0.00989	< 0.0001	< 0.0001	0.00717	0.00744			
Inorganics			1.05									
Bicarbonate (mg/L)	NE	311	101	170	134	109	124	786	167			
Chlorides (mg/L)	250	49.3	8.34	145	107	3.2	4.4	133	10.24			
Nitrate (mg/L)	10	< 0.11	2.08	< 0.11	5.28	< 0.11	9.89	< 0.11	9.91			
Total ammonia (mg/L)	NE	3.88	0.21	2.98	0.3	2.3	0.55	8.57	4.41			
Total Dissolved Solids (mg/L)	500	600	168	302	282	512	424	1670	420			
Organics												
Benzene ( $\mu$ g/L)	1	< 0.5	< 0.5	< 0.801	< 0.801	< 1	< 1	1.06	<1			
Chlorobenzene ( $\mu$ g/L)	100	< 0.5	< 0.5	< 0.449	< 0.449	< 1	< 1	< 1	< 1			
1,2-dichlorobenzene ( $\mu$ g/L)	600	< 0.5	< 0.5	< 0.674	< 0.674	<1	<1	<1	<1			
1,4-dichlorobenzene (µg/L)	75	< 0.5	< 0.5	<1.19	<1.19	<1	<1	<1	<1			
1,2-dichloroethane ( $\mu$ g/L)	3	< 1	<1	< 0.642	< 0.642	<1	<1	<1	< 1			
1,1-dichloroethene (µg/L)	7	<1	<1	<1.7	<1.7	<1	<1	<1	<1			
Ethylbenzene (µg/L)	700	1.04	< 0.5	<1.44	< 1.44	<1	<1	<1	<1			
Methylene chloride (μg/L)	5	3.33	2.76	1	< 0.766	<1	<1	<1	<1			Detected in eq. blk. 8/4/9
Naphthalene (μg/L)	6.8*	<1	<1	<2.82	< 2.82	3.05	<1	<1	<1			1
Tetrachloroethene (µg/L)	3	<1	<1	<1.46	<1.46	<1	<1	<1	<1			
Vinyl Chloride (μg/L)	1	< 0.5	< 0.5	<1.46	<1.46	<1	<1	<1	<1			
Appendix II parameters?	4 27	No	No	Yes	Yes	No	No	Yes	Yes			

NA = not analyzed

NS = not sampled

#### 6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER SYSTEM								
Parameter Meas.	No.	No.	No.	Minimum	Lower	Median	Upper	Maximum
Description Units	Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
			======			======		=======
Depth to Water (from Ise) feet	109		12	0.63	5.24	7.535	11.2	46.51
Depth to Water (from mpe) feet	474				4.695		9.71	137.9
Eh, Field, (hydrogen electrode) mv	480		0				154.575	906
Land Surface Elevation (from mse) feet	102		0	_		66	112	264.9
Measuring Point Elevation (from mse feet	403					33.39	74.645	210.29
MicroLanduse Category	350		0		1	1	2	5
Oxygen, Dissolved, Field mg/L	449		35	0	0.31	0.7	2.425	11.3
Purge Volume gal	423		0		18.4775	36	74.5295	6780
Specific Conductance, Field uS/cm	615	5863	0	11	109.4457	390.5		48800
Water Level Elevation (from mse) feet	449	3022		-21.72	12.03	25.5435		202.295
Water Temperature øC	611	5856		18	22.8536	24.22	25.27	36.2
pH s.u.	220		0	3.85	5.7	6.7	6.99	10.4
pH, Field s.u.	551	5105	12	3.67		6.55	7.02	9.18
Alkalinity, Dissolved (as CaCO3) mg/L	520		240	0.5	10.4711	110	262.575	1390
Alkalinity, Total (as CaCO3) mg/L	196	889	4	1	74.016	218.95		532
Alkalinity, Total Field (as CaCO3) mg/L	3		0	37	NSD	NSD	NSD	241
Bicarbonate Alkalinity, Diss. (as C mg/L	112	356	23	1	17.8834	98.6667		630
Bicarbonate Alkalinity, Total (as C mg/L	71 132	103 281	4 6	1.5	6.3	25	96	320
Bicarbonate, Total (as HCO3) mg/L Calcium, Dissolved mg/L	540	2530	9	0.05 0.22	9.85 5.8628	32.1 42.925	127.0861 98.7923	382.7873 563
Calcium, Total mg/L	303	884	26	0.22	10.04	48.56		857
Carbonate Alkalinity, Diss. (as CaC mg/L	60		72	0.24	0.5	1.5	2.525	5
Carbonate Alkalinity, Total (as CaC mg/L	44	44	37	0.03	0.5	0.5	0.5	1.5
Carbonate, Total (as CO3) mg/L	99	106	79	0	0.05	0.05	0.05	70
Chloride, Dissolved mg/L	541	2532		1.3	7.3242	16.5	50.3333	19000
Chloride, Total mg/L	294	848	3	0.5	9.4	21.675	55.8	8520
Color Pt-Co	300	347	13	2.5	15	60	150	4500
Fluoride, Dissolved mg/L	537	2431	1213	0.025	0.05	0.1033	0.25	2.8667
Fluoride, Total mg/L	295	877	168	0.008	0.0715	0.18	0.3768	2.965
Hardness, Noncarbonate mg/L	250	785	0	0.8018	6.4724	16.944	48.3181	3705.824
Hardness, Total mg/L	382	1744	5	0.2	34.9315	178.468	299.9932	3927.77
Magnesium, Dissolved mg/L	587	3160	77	0.1212	1.3834	3.35	9.4781	1180
Magnesium, Total mg/L	191	252	3	0.05	1.3725	2.9	7.705	401
Organic Carbon, Dissolved mg/L	148	160	15	0.5	2.325	6.2	13	75
Organic Carbon, Total mg/L	578	1644	181	0.05	3.814	10.0625	21	415.15
Oxygen, Dissolved mg/L	6	6	0	0	0.1	1	3.5	5.2
Potassium, Dissolved mg/L	540	2528	150	0.0415	0.5958	1.19	3.0927	309.5
Potassium, Total mg/L	304	885	6	0.01	0.5738	1.175	3.179	601.6
Silicate, Total mg/L	2	2	0	16	NSD	NSD	NSD	25
Sodium Absorption Ratio	328	1113	0	0.0212	0.3006	0.5465	1.0128	45.6687
Sodium Percent	321	1085	0	0.7308	13.7589	23.5286	38.586	91
Sodium+Potassium mg/L	318	1086	0	1.485	6.14	12.9575	34.9	6745
Sodium, Dissolved mg/L	541	2533	1	0.69	4.4189	11.05	34.8	9170
Sodium, Total mg/L	303	882	2	0.7	5.4	14	35.0469	3730
Specific Conductance uS/cm	500	738	1	12	91.0833	310	655	30000
Specific Conductance, QA uS/cm	384	1315	0	20	102	364.3334	676.4286	34400
Sulfate, Dissolved mg/L	539	2502	283	0.1	1.7667	5.75	22.5	2100
Sulfate, Total mg/L	296	866	196	0.05	4.225	10	29.85	1050
Sulfide Odor	293	522	0	0	NSD	NSD	2	26.7
Sulfide, Total mg/L	468	699	363	0.014	0.025	0.069	0.4663	51
Total Dissolved Solids (TDS measure mg/L	334	1335	1	1.35	99	262.8309	433.5	17700
Total Dissolved Solids (TDS-calcula mg/L	264	333	0	14	84.8147	266.6227	451.7732	21951
Total Suspended Solids (TSS) mg/L	17	19	0	8.205	15.6	43.34	105.1	982.4
Turbidity ntu	527	1243	35	0.05	4.675	16	62.5	4005.5
Turbidity, Field ntu	35	196	0	0.002	0.64	1.3622	7.3578	231
Turbidity, Lab ntu	30	31	0	2.4	16	30.25	116	3700

 $s\_w/jrm/pasco/xls/enterpriseCIII.surficial.xls$ 

6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER SY Parameter	Meas.	No.	No.	No.	Minimum	Lower	Madias	Linner	Movimo
Description	Units	Station	Sample	BDLS	Minimum Value	Lower Quartile	Median Value	Upper Quartile	Maximum Value
=======================================			•	======		======			value
pH, Lab	s.u.	181	232	0	3.87	6.14	6.84	7.18	11.24
Aluminum, Dissolved	ug/L	497	1004	298	7.2	17.5	32	108	13770
Aluminum, Suspended	ug/L	196	218	36	5	21	127.5	732.5	45769
Aluminum, Total	ug/L	447	704	37	10	70	264.5	949	237000
Antimony, Dissolved	ug/L	68	74	48	0.1	0.2	1	1.245	7.6
Antimony, Total	ug/L	292	317	272	0.04	0.1	0.2	0.75	5.5
Arsenic, Dissolved	ug/L	258	318	221	0.005	0.55	1.49	3	30.15
Arsenic, Total	ug/L	561	1403	933	0.3	0.75	1	2.6667	213.3333
Barium, Dissolved	ug/L	499	1084	148	0.25	8.9381	18.7	31.1	131
Barium, Suspended	ug/L	187	206	200	50	50	50	50	408
Barium, Total	ug/L	517	1029	212	0.05	9.845	18	36.8	845.5333
Beryllium, Dissolved	ug/L	258	281	276	0.03	0.1	0.15	0.2	1
Beryllium, Total	ug/L	292	318	300	0.01	0.2	0.25	0.25	4
Cadmium, Dissolved	ug/L	384	550	388	0.0025	0.04	0.1	0.25	31.025
Cadmium, Total	ug/L	546	1218	829	0.01	0.26	0.4475	0.6667	84
Chromium, Dissolved	ug/L	449	814	699	0.005	1.7433	2.5	2.8333	23
Chromium, Suspended	ug/L	63	66	30	0.5	0.5	1	2	82
Chromium, Total	ug/L	565	1462	882	0.1	2.0333	3.8667	6.5	935.7
Cobalt, Dissolved	ug/L	22	22	17	0.2	0.2	0.2	0.2	0.89
Cobalt, Total	ug/L	10	10	8	0.2	0.2	0.2	5	50
Copper, Dissolved	ug/L	503	998	805	0.015	2.3698	3.225	5	839
Copper, Suspended	ug/L	34	36	11	0.5	3	9.5	20	620
Copper, Total	ug/L	564	1471	692	0.1935	2.75	5	9.0625	747.5
Iron, Dissolved	ug/L	589	3105	365	1.5	48.8667	387.5	1417.241	40700
Iron, Suspended	ug/L	311	396	19	0.2	70	292	1500	46100
Iron, Total	ug/L	568	1737	24	5	315	1296.5	4379.167	144717
Lead, Dissolved	ug/L	513	1170	880	0.05	0.3625	0.5	1	2240
Lead, Suspended	ug/L	252	313	32	0.5	1.25	5.25	20.25	7370
Lead, Total	ug/L	563	1464	344	0.05	1.435	5.575	19.3934	3750
Manganese, Dissolved	ug/L	507	1573	304	0.014	5	11.4	27.875	1002.5
Manganese, Suspended	ug/L	178	196	113	0.5	0.5	0.5	3	300
Manganese, Total	ug/L	564	1460	159	0.3	7	14.975	42.425	1349.267
Mercury, Dissolved	ug/L	170	219	207	0.0001	0.0501	0.1	0.1	1.5001
Mercury, Total	ug/L	540	1107	924	0.05	0.05	0.05	0.09	26.025
Nickel, Dissolved	ug/L	482	912	829	0.03	2.515	3.5	5	62
Nickel, Suspended	ug/L	37	37	28	0.5	0.5	0.5	0.5	30
Nickel, Total	ug/L	465	803	686	0.35	3	4.3333	5	51.6667
Selenium, Dissolved	ug/L	205	261	222	0.005	1	1	2	11.6
Selenium, Total	ug/L	501	999	904	0.5	0.5	0.75	2	16
Silver, Dissolved	ug/L	416	687	656	0.015	0.2625	0.5	0.5	3.05
Silver, Suspended	ug/L	23	24	22	0.5	0.5	0.5	0.5	1
Silver, Total	ug/L	518	1007	882	0.02	0.26	0.5	2.1667	25
Strontium, Dissolved	ug/L	588	1796	81	1.5		238.7857	730	78900
Strontium, Suspended	ug/L	158	172	121	5	5	5	22	1329
Strontium, Total	ug/L	· 471	806	27	2	37.3167	219	677.3333	78000
Thallium, Dissolved	ug/L	72	78	53	0.01	0.025	0.05	1.5	6
Thallium, Total	ug/L	292	317	263	0.005	0.02	0.025	0.05	12
Vanadium, Dissolved	ug/L	292	319	219	0.2	1	1	2	36
Vanadium, Total	ug/L	292	317	177	0.25	1	2	5	202
Zinc, Dissolved	ug/L	507	1585	797	0.12	4	8	19.9773	3281.667
Zinc, Suspended	ug/L	160	177	117	5	5	5	21.5	14190
Zinc, Total	ug/L	557	1461	411	1	8.5	18	42.3333	25800
Cyanide, Dissolved	mg/L	22	25	25	0.005	0.005	0.005	0.005	0.005
Cyanide, Total	mg/L	180	207	198	0.005	0.005	0.005		
Ammonia+Organic Nitrog	•	499	1042	119	0.0023			0.005	0.0233
Ammonia, Dissolved (As I	•	184	203	0	0.0258	0.215 0.161	0.605	1.1292	27
Ammonia, Dissolved (As I		574	1771				0.3542	0.7405	4.8938
	·/ mg/L	3/4	1771	178	0.0025	0.0542	0.2317	0.51	50

6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

SURFICIAL AQUIFER Parameter	Meas.	No.	No.	No.	Minimum	Lower	Median	Upper	Maximum
Description	Units	Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
Ammonia, Total (as N)	======================================	=== ======= 28	: ====== 28	6	0.005	0.0625	0.285	0.555	2.4
Nitrate+Nitrite, Dissolv		48	66	0	0.13	0.1786			146.2432
Nitrate+Nitrite, Dissolv	ed (as N) mg/L	539	2472	952	0.002	0.013	0.03	0.1037	30
Nitrate+Nitrite, Total (a	s N) mg/L	267	790	210	0.0005	0.0057	0.016	0.05	33.91
Nitrate, Dissolved (as I	N) mg/L	27	183	92	0.0109	0.0259	0.0483	0.1775	3.175
Nitrate, Total (as N)	mg/L	153	628	288	0.002	0.0065	0.0172	0.048	6.1112
Nitrate, Total (as NO3)	mg/L	1	4	3	0.045	NSD	NSD	NSD	0.045
Nitrite, Dissolved (as N	l) mg/L	20	134	130	0.005	0.01	0.01	0.01	0.0167
Nitrite, Total (as N)	mg/L	116	635	421	0.002	0.0023	0.0039	0.008	0.1993
Nitrogen, Dissolved	mg/L	118			0.24	0.65	1.005	2.24	34
Organic Nitrogen, Diss	<u>-</u>	193				0.28		0.73	4.46
Orthophosphate, Disso	, ,	547			0.002	0.012		0.115	9.9
Orthophosphate, Disso	, , ,	1		0	0.092	NSD	NSD	NSD	0.092
Orthophosphate, Total	` '	101		26	0.0025	0.0433	0.104	0.277	1.815
Phosphate, Total	mg/L	81	91	5	0.0015			0.348	1.39
Phosphorus, Dissolved		520		100	0.002	0.0223	0.0512	0.13	111
Phosphorus, Total (as	•	68		27	0.005	0.0413	0.0506	0.1152	1.4498
Silica, Dissolved	mg/L	580		7	0.5	5.225	8.8834	15.5	88
1,1,1-Trichloroethane	ug/L	477		1194	0.25	0.25		0.93	
1,1,2,2-Tetrachloroetha 1,1,2-Trichloroethane	ane ug/L ug/L	473 479		1211 1226	0.25 0.25	0.25		1.25	64.125
1,1-Dichloroethane	ug/L ug/L	479 479		1240	0.25	0.25 0.25	0.25 0.25	0.5025	8.5833
1,1-Dichloroethene	ug/L	479		1240	0.25	0.25	0.25	0.6525	1600.125 9.625
1,1-Dichloropropane	ug/L	22		25	0.25	0.25	0.25	0.0323	0.25
1,2-Dibromo-3-chlorop	_	39	43	43	0.23	0.23	0.23	0.23	0.23
1,2-Dibromoethane (El	, .	198		498	0.0025	0.25	2.5	2.5	2.5
1,2-Dichlorobenzene	ug/L	473		1247	0.25	0.25	0.3333	2.625	8.5833
1,2-Dichloroethane	ug/L	479		1244	0.25	0.25	0.25	0.505	8.5833
1,2-Dichloroethene (cis		142		412	0.25	2.5	2.5	2.5	2.5
1,2-Dichloroethene (tra		479		1219	0.25	0.25	0.25	0.5	8.5833
1,2-Dichloropropane	ug/L	479	1245	1241	0.25	0.25	0.25	0.625	8.5833
1,3-Dichlorobenzene	ug/L	467	1227	1227	0.25	0.25	0.3125	2.625	8.5833
1,3-Dichloropropene	ug/L	155		350	0.25	0.25	0.25	0.25	10
1,3-Dichloropropene (c		460	1067	1067	0.25	0.25	0.25	1.6719	12.75
1,3-Dichloropropene (ti		460	1069	1069	0.25	0.25	0.25	1.5921	8.5833
1,4-Dichlorobenzene	ug/L	467	1227	1218	0.25	0.25	0.3125	2.625	8.5833
2,4,5-TP (Silvex)	ug/L	69	71	71	0.001	0.001	0.001	0.001	0.025
2,4-D	ug/L	89	95	93	0.0025	0.0025	0.0025	0.05	3.69
2,4-DB	ug/L	22	25	25	0.5	0.5	0.5	0.5	0.5
2-Chloroethylvinyl ethe	r ug/L	479	1244	1244	0.25	0.25	0.25	0.75	8.5833
2378-Tetrachlorodibena	zo-P-Dioxin (T ug/L	7	7	7	5	5	5	5	5
3-Hydroxycarbofuran	ug/L	296	335	335	0.5	1	1	1	2.5
Acrolein	ug/L	45	45	45	0.5	0.5	12.5	12.5	25
Acrylonitrile	ug/L	45	45	45	0.5	0.5	12.5	12.5	25
Alachlor	ug/L	307	356	356	0.075	0.145	0.145	0.145	0.5
Aldicarb	ug/L	306	356	356	0.1	1	1	1	3
Aldicarb sulfone	ug/L	296	335	335	0.25	1	1	1	2.5
Aldicarb sulfoxide	ug/L	295	334	334	0.25	1	1	1	2.5
Aldrin	ug/L	325	419	419	0.002	0.0048	0.0048	0.0049	5
Ametryne	ug/L	1	1	1	0.015	NSD	NSD	NSD	0.015
Atrazine	ug/L	307	357	355	0.0133	0.024	0.024	0.0249	0.39
BHC, Alpha	ug/L	302	387	387	0.0047	0.0048	0.0048	0.0049	3.335
BHC, Beta	ug/L	302	361	361	0.0042	0.0048	0.0048	0.0052	2.1683
BHC, Delta	ug/L	302	361	361	0.0038	0.0048	0.0048	0.0049	2.1683
BHC, Gamma (Lindan		328	449	449	0.0003	0.0048	0.0048	0.0049	3.335
Benfluralin	ug/L	22	25	25	0.002	0.005	0.005	0.005	0.005
Benzene	ug/L	473	1221	1213	0.25	0.25	0.25	0.5	8.5833
DOMEGNIC	ug/L	4/3	1221	1213	0.25	0.25	0.25	0.5	8.5833

#### 6/20/01

Enterprise CI3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

Semma	Parameter Description	Meas. Units	No. Station	No. Sample	No. BDLS	Minimum Value	Lower Quartile	Median Value	Upper Quartile	Maximum Value
Bromofolm or up/L	•			-						
Bromorform   Ug/L   479   1249   1249   1249   1245   0.25   0.25   0.25   0.25   0.35   0.		•								67
Bromomethane		•								
Captan         ug/L         1         1         1         1         0.005         NSC         NSC         NSC         OLD           Carbonyl         ug/L         396         335         335         0.5         1         0.025         0.25         0.25         0.25         0.25         0.25         0.25         0.25         0.25         0.25         0.025         0.025         0.025         0.025         0.025         0.025         0.055		_								8.5833
Carbaryl         up/L         296         335         335         0.5         1         0.01         NSD         NSD<		-								
Carbon/aran   ug/L   306   359   350   0.5   0.1   1   1   1   1   1   1   1   1   1	•	~								0.005
Carbon tetrachloride	•	-								
Carbophenchion (Trithion)   ug/L   329   411   411   0.01   NSD   NSD   NSD   NSD   Chlorobenzene   ug/L   295   334   334   0.025		•								12.8
Chlordane		_								8.5833
Chlorobenzene	. ,	, -								0.01
Chlorobenzilate   ug/L   295   334   334   0.0235   0.024   0.0245   0.024   0.0245   0.024   0.0245   0.024   0.0245   0.02		•								5.025
Chloroethane		•								
Chloroform		•								8.5833
Chloromethane Ug/L 37 40 1245 1244 0.25 0.25 0.3125 0.75 8.50 Chloropicinin Ug/L 37 40 10 0.001 0.001 0.005		•								8.5833
Chloropicrin ug/L 22 25 25 0.001 0.001 0.001 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.0075 0.0076 0.001 0		•								8.5833
Chlorothalonii (Bravo)   ug/L   22   25   25   0.001   0.01		_								0.005
Chlorobluene ug/L 298 337 337 0.025 0.25 0.25 0.25 0.26 Chloryrifos ug/L 298 337 337 0.05 0.0575 0.0478 0.0485 0.0095 0.0	•									0.003
Chloryyifes   ug/L   288   337   337   0.005   0.0475   0.0478   0.0485   0.0DD (p.p)   ug/L   329   438   438   0.005   0.0095   0.0095   0.011   2.0005   0.0095	, ,	<del>-</del>								0.5
DDE (p,p')	Chlorpyrifos									0.06
DDT (p.p')	DDD (p,p')	ug/L	329	438	438	0.005	0.0095	0.0095		2.505
Dacthal (OCPA)   ug/L   15   15   15   0.025   0.25   0	DDE (p,p')	ug/L	329	438	438	0.002	0.0095	0.0095	0.01	5.27
Demeton   Ug/L   17   7   7   0.5	DDT (p,p')	ug/L	329	450	450	0.005	0.0098	0.0145	0.0145	2.675
Diazinon         ug/L         302         350         344         0.005         0.0475         0.0479         0.0485           Dibromochloromethane         ug/L         479         1245         1245         0.25         0.25         0.25         0.25         0.25         0.25         0.5         8.56           Dicamba         ug/L         1         1         1         0.002         NSD         NSD         NSD         0.00           Dichlorodhorane         ug/L         119         384         384         0.5         2.5         2.5         2.5         0.05         0.5         0.5         0.5         0.5         0.01	Dacthal (DCPA)	ug/L			15	0.025	0.25	0.25	0.25	0.25
Dibromochloromethane		<u>-</u>					0.5	0.5		0.5
Dicamba   ug/L   1		-							0.0485	1.8
Dichloran   Ug/L   1							0.25	0.25		8.5833
Dichlorobenzene   ug/L   119   384   384   0.5   2.5   2.5   2.5   Dichlorodifluoromethane   ug/L   283   614   614   0.25   0.5   0.5   0.5   0.5   2.5   Dichlorodifluoromethane   ug/L   22   25   25   2.5   0.005   0.01   0.01   0.01   0.005   0.005   0.001   0.005		•								2.5
Dichlorodifluoromethane   ug/L   283   614   614   0.25   0.5   0.5   0.5   2.5     Dicofol (Kelthane)   ug/L   22   25   25   25   0.005   0.01   0.01   0.01   0.01     Dieldrin   ug/L   298   337   337   0.025   0.07   0.07   0.075   0.005     Disulfoton   ug/L   329   448   449   0.001   0.0095   0.0095   0.001     Dieldrin   ug/L   329   448   428   0.0047   0.0073   0.0095   0.0095     Endosulfan   ug/L   329   448   428   0.0047   0.0073   0.0095   0.0095     Endosulfan   ug/L   302   370   370   0.0047   0.0075   0.0095   0.0095     Endosulfan sulfate   ug/L   302   378   369   0.0095   0.0095   0.0095   0.01   2.76     Endrin   ug/L   302   378   369   0.0095   0.0095   0.0095   0.01   2.76     Endrin   ug/L   302   354   354   0.0095   0.0145   0.0145   0.0145     Endrin   ug/L   302   354   354   0.0095   0.0145   0.0145   0.0145     Endrin aldehyde   ug/L   302   354   354   0.0095   0.0145   0.0145   0.0145     Ethion   ug/L   307   357   355   0.005   0.0475   0.0475   0.0485   0.78     Ethioprop   ug/L   307   357   355   0.005   0.005   0.005   0.005     Ethyl Parathion   ug/L   307   357   356   0.005   0.045   0.045   0.045     Ethyl Parathion   ug/L   329   412   412   0.0015   0.0048   0.004     Heptachlor   ug/L   329   413   412   0.0015   0.0048   0.0048   0.0049     Heptachlor epoxide   ug/L   307   356   351   0.05   0.095   0.095   0.011     Heptachlor   ug/L   378   311   311   0.2   0.2   0.2   0.2   0.2     Imidacloprid   ug/L   278   311   311   0.2   0.2   0.2   0.2   0.2     Iprodione   æg/L   278   311   311   0.2   0.2   0.2   0.2   0.2     Iprodione   æg/L   278   311   311   0.2   0.2   0.2   0.2   0.2     Iprodione   wg/L   278   311   311   0.2   0.2   0.2   0.2   0.2   0.2     Iprodione   æg/L   278   311   311   0.2   0.2   0.2   0.2   0.2   0.2     Iprodione   wg/L   278   311   311   0.2   0.2   0.2   0.2   0.2   0.2     Iprodione   wg/L   278   311   311   0.2   0.2   0.2   0.2   0.2   0.2   0.2     Iprodione   wg/L   278   311   311   0.2   0.2   0.2   0.2   0.2   0.		•							NSD	0.002
Dicofol (Kelthane)   Ug/L   329   449   449   0.001   0.0015   0.0015   0.011   0.01		•								2.5
Dieldrin   Ug/L   298   337   337   0.025   0.095   0.011   2   2   2   2   2   2   2   2   2		· J					0.5	0.5		5
Disulfoton   Ug/L   298   337   337   0.025   0.07   0.07   0.075	, ,	=				0.005	0.01	0.01	0.01	0.01
Diuron   Ug/L   307   360   353   0.0045   0.2   0.2   0.2   0.2   1.5		-								2.67
Endosulfan I         ug/L         329         428         428         0.0047         0.0073         0.0095         0.0095         4.00           Endosulfan II         ug/L         302         370         370         0.0047         0.0095         0.0095         0.01         4.00           Endosulfan sulfate         ug/L         302         378         369         0.0095         0.0095         0.01         2.76           Endrin         ug/L         330         410         410         0.0005         0.0145         0.024         0.02										0.09
Endosulfan II ug/L 302 370 370 0.0047 0.0095 0.0095 0.001 4.00 Endosulfan sulfate ug/L 302 378 369 0.0095 0.0095 0.0095 0.01 2.76 Endrin ug/L 330 410 410 0.0005 0.0123 0.024 0.0243 Endrin aldehyde ug/L 302 354 354 0.0095 0.0145 0.0145 0.0145 Ethion ug/L 298 337 337 0.0192 0.024 0.024 0.0245 Ethion ug/L 307 357 355 0.005 0.0475 0.0475 0.0485 0.78 Ethyl Parathion ug/L 66 67 67 0.0045 0.005 0.005 0.005 0.005 Ethylbenzene ug/L 473 1221 1216 0.25 0.25 0.25 1.75 5 Fenamiphos ug/L 307 357 356 0.005 0.145 0.145 0.145 0.145 Heptachlor ug/L 329 412 412 0.0015 0.0048 0.0048 0.0049 Heptachlor epoxide ug/L 329 413 412 0.0015 0.0048 0.0048 0.0049 Heptachlor epoxide ug/L 329 413 311 0.0 0.005 0.005 0.015 Imidacloprid ug/L 278 311 311 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2		•								15.2
Endosulfan sulfate		-								4.0033
Endrin ug/L 330 410 410 0.0005 0.0123 0.024 0.0243 Endrin aldehyde ug/L 302 354 354 0.0095 0.0145 0.0145 0.0145 2.5 Ethion ug/L 298 337 337 0.0192 0.024 0.024 0.0245 0.025 Ethoprop ug/L 307 357 355 0.005 0.0475 0.0475 0.0485 0.78 Ethyl Parathion ug/L 66 67 67 0.0045 0.005 0.005 0.005 0.005 Ethyl Parathion ug/L 473 1221 1216 0.25 0.25 0.25 1.75 5 Ethyl Benzene ug/L 307 357 356 0.005 0.045 0.005 0.005 0.005 Ethylbenzene ug/L 307 357 356 0.005 0.045 0.005 0.005 0.005 Ethylbenzene ug/L 329 412 412 0.0015 0.0048 0.0048 0.0049 Heptachlor ug/L 329 413 412 0.0015 0.0048 0.0048 0.0049 Heptachlor epoxide ug/L 307 356 351 0.05 0.095 0.095 0.0115 Hexazinone ug/L 307 356 351 0.05 0.095 0.095 0.0115 Hexazinone ug/L 307 356 351 0.05 0.095 0.095 0.0115 Imidacloprid ug/L 278 311 311 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2		-								4.0083
Endrin aldehyde ug/L 298 337 337 0.0192 0.024 0.024 0.0245 0.0145		<u> </u>								2.7625
Ethion         ug/L         298         337         337         0.0192         0.024         0.024         0.0245         0.0245           Ethoprop         ug/L         307         357         355         0.005         0.0475         0.0485         0.78           Ethyl Parathion         ug/L         66         67         67         0.0045         0.005         0.015         0.005         0.015         0.004         0.0048         0.0049         0.0049         0.0049         0.0049         0.0049         0.0048         0.0049         0.0049         0.0049         0.0049         0.0049         0.0049         0.0047         0.0095         0.0095         0.0115         0.0048         0.0049         0.0049         0.0049         0.0047         0.0095         0.0095         0.0115         0.0048         0.0049         0.0048         0.0049         0.0049		<u>-</u>								6
Ethoprop ug/L 307 357 355 0.005 0.0475 0.0475 0.0485 0.78  Ethyl Parathion ug/L 66 67 67 0.0045 0.005 0.005 0.005 0.005  Ethyl Parathion ug/L 473 1221 1216 0.25 0.25 0.25 1.75 55  Fenamiphos ug/L 307 357 356 0.005 0.145 0.145 0.145 0.145 0.145  Heptachlor ug/L 329 412 412 0.0015 0.0048 0.0048 0.0049  Heptachlor epoxide ug/L 329 413 412 0.0047 0.0095 0.0095 0.0115  Hexazinone ug/L 307 356 351 0.05 0.095 0.095 0.115  Hexazinone ug/L 307 356 351 0.05 0.095 0.095 0.115  Hiddacloprid ug/L 278 311 311 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2										5.5
Ethyl Parathion         ug/L         66         67         67         0.0045         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.145         0.145         0.145         0.145         0.145         0.145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0145         0.0048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0049         0.0048         0.0048         0.0049         0.0048         0.0048         0.0049         0.0048         0.0048         0.0049         0.0048         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0015         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         0.005         <		•								0.03
Ethylbenzene         ug/L         473         1221         1216         0.25         0.25         0.25         1.75         5           Fenamiphos         ug/L         307         357         356         0.005         0.145         0.0448         0.0049         0.0048         0.0048         0.0049         0.0048         0.0049         0.00115         0.00115         0.00115         0.0048         0.0049         0.00115         0.00115         0.0095         0.0095         0.0115         0.00115         0.00115         0.00115         0.002         0.02         0.02         0.02         0.02         0.02         0.02	• •	<u> </u>							0.0485	0.7877
Fenamiphos         ug/L         307         357         356         0.005         0.145         0.048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0048         0.0049         0.0015         0.0048         0.0049         0.0015         0.0048         0.0049         0.0015         0.0095         0.0095         0.00115         0.0015         0.005         0.0095         0.0095         0.0115         0.0015         0.0095         0.005         0.0095         0.002         0.02         0.02         0.02         0.02         0.02         0.02         0.02         0.02         0.0095         0.0095         0.0095         0.0095         0.0095         0.0095         0.0095										0.035
Heptachlor         ug/L         329         412         412         0.0015         0.0048         0.0048         0.0049           Heptachlor epoxide         ug/L         329         413         412         0.0047         0.0095         0.0095         0.0115           Hexazinone         ug/L         307         356         351         0.05         0.095         0.095         0.1           Imidacloprid         ug/L         278         311         311         0.2         0.2         0.2         0.2         0.2           Iprodione         æg/L         278         311         311         0.375         0.38         0.385         0.39         0.           Isodrin         ug/L         276         310         310         0.0073         0.0095         0.00	•									500
Heptachlor epoxide         ug/L         329         413         412         0.0047         0.0095         0.0095         0.0115           Hexazinone         ug/L         307         356         351         0.05         0.095         0.095         0.1         6           Imidacloprid         ug/L         278         311         311         0.2         0.0         0.0095         0.00	•	<del>-</del>								0.25
Hexazinone         ug/L         307         356         351         0.05         0.095         0.095         0.1         1           Imidacloprid         ug/L         278         311         311         0.2         0.0         0.0095         <	•									5
Imidacloprid         ug/L         278         311         311         0.2         0.38         0.385         0.39         0.0         0.0         0.0         0.0073         0.0095         0.0095         0.0095         0.00         0.00         0.0073         0.0095         0.0095         0.00	•									5
Iprodione		-								1.3
Isodrin         ug/L         276         310         310         0.0073         0.0095	•	•								0.2
Sofenphos   ug/L   298   337   337   0.0382   0.0475   0.048   0.049	•									0.48
Linuron         ug/L         278         311         311         0.2         0.2         0.2         0.2         0.2         0.2           Malathion         ug/L         284         323         323         0.005         0.07         0.07         0.075         0.07           Metalaxyl         ug/L         299         338         337         0.25         0.285         0.29         0.295         2           Metam Sodium         ug/L         15         15         15         1.5         1.5         1.5         1.5           Methamidophos         ug/L         22         25         25         0.045         1         1         1		-								0.012
Malathion         ug/L         284         323         323         0.005         0.07         0.07         0.075         0           Metalaxyl         ug/L         299         338         337         0.25         0.285         0.29         0.295         2           Metam Sodium         ug/L         15         15         15         1.5         1.5         1.5         1.5         1           Methamidophos         ug/L         22         25         25         0.045         1         1         1         1	•									0.1
Metalaxyl         ug/L         299         338         337         0.25         0.285         0.29         0.295         2           Metam Sodium         ug/L         15         15         15         1.5         1.5         1.5         1.5         1           Methamidophos         ug/L         22         25         25         0.045         1         1         1										0.2
Metam Sodium         ug/L         15         15         15         1.5										0.1
Methamidophos ug/L 22 25 25 0.045 1 1 1	•	-								4.7
		<del>=</del>								1.5
weunomyr ug/L 306 575 574 0.5 1 1 1 24.	•									1
	wemomyi	ug/L	306	5/5	5/4	0.5	1	1	1	24.75

6/20/01

Enterprise Cl3, Dade City.Pasco Co. 50 mi Radius well search,1621 Stations SURFICIAL AQUIFER SYSTEM

Parameter	Meas.		No.	No.	No.	Minimum	Lower	Median	Upper	Maximum
Description	Units		Station	Sample	BDLS	Value	Quartile	Value	Quartile	Value
=======================================		========	======		======	=======			=======	======
Methoxychlor	ug/L		311	384	384	0.005	0.0238	0.024	0.0245	0.0878
Methyl Azinphos (Gut	,		283	322	322	0.08	0.095	0.095	0.0975	1
Methyl Parathion	ug/L		298	338	338	0.025	0.0475	0.0478	0.0485	0.06
Methyl tert-Butyl Ethe	r (MTBE) ug/L	-	31	34	34	0.25	0.25	0.25	0.5	5
Methylene chloride ug/L			479	1245	1242	0.25	0.25	0.25	0.8	8.5833
Methylisothiocyanate	(MITC) ug/L	-	22	25	25	37.5	37.5	37.5	37.5	37.5
Metolachlor	ug/L		278	311	311	0.235	0.24	0.24	0.245	0.3
Metribuzin	ug/L		307	356	356	0.0025	0.095	0.095	0.1	0.25
Mevinphos	ug/L		298	337	337	0.005	0.12	0.12	0.12	0.15
Mirex	ug/L		66	67	67	0.0005	0.0005	0.0005	0.0005	0.015
Naled	ug/L		298	337	337	0.05	0.38	0.3825	0.39	0.48
Norflurazon	ug/L		298	337	334	0.1283	0.145	0.145	0.145	3.2
Oxamyl	ug/L		306	359	359	0.5	1	1	1	6.1
PCNB	ug/L		276	310	310	0.0067	0.0095	0.0095	0.0095	0.012
Pendimethalin	ug/L		22	25	25	0.005	1	1	1	1
Permethrin	ug/L		22	25	25	0.1	0.5	0.5	0.5	0.5
Perthane	ug/L		1	1	1	0.1	NSD	NSD	NSD	0.1
Phorate	æg/L		278	311	311	0.0465	0.0475	0.048	0.0485	0.06
Picloram	ug/L		22	25	25	0.01	0.01	0.01	0.01	0.01
Prometon	ug/L		218	246	246	0.08	0.095	0.095	0.095	0.12
Prometryn	ug/L		298	337	337	0.0382	0.0475	0.048	0.049	0.5
Propazine	ug/L		21	22	17	0.0325	0.05	0.05	0.05	0.37
Propoxur	ug/L		296	352	351	0.5	1	1	1	3,75
Simazine	ug/L		307	357	355	0.0145	0.024	0.024	0.025	0.66
Strobane	ug/L		1	1	1	0.25	NSD	NSD	NSD	0.25
Styrene	ug/L	•	38	40	40	0.25	0.25	0.25	0.5	2.5
Tebuthiuron (GRASLA		ıg/L	218	245	245	0.465	0.475	0.48	0.485	0.6
Terbufos	ug/L		298	337	337	0.05	0.07	0.07	0.075	0.25
Terbuthylazine	ug/L		1	1	1	0.1	NSD	NSD	NSD	0.1
Terbutryn	ug/L		1	1	1	0.025	NSD	NSD	NSD	0.025
Tetrachloroethene	ug/L		479	1271	1270	0.25	0.25	0.25	0.625	8.5833
Toluene	ug/L		473	1223	1167	0.25	0.25	0.3125	1.375	45.3725
Toxaphene	ug/L		330	418	418	0.0375	0.355	0.355	0.365	366.6667
Triademefon	ug/L		298	337	337	0.1133	0.12	0.12	0.125	0.5
Trichloroethene	ug/L		479	1227	1226	0.25	0.25	0.25	0.5275	8.5833
Trichlorofluoromethan	_		452	1088	1077	0.25	0.25	0.3417	1.5679	8.5833
Trifluralin	ug/L		22	25	25	0.005	0.005	0.005	0.005	0.005
Trimethylbenzene	ug/L		7	7	7	2.5	2.5	2.5	2.5	2.5
Vinyl Chloride	ug/L		479	1245	1228	0.25	0.25	0.25	1.3929	8.5833
Xylenes	ug/L		403	695	680	0.25	0.25	0.25	0.25	
	ug, L		703	090	000	0.25	0.25	0.25	0.25	12.625

NOTE: Data from different water bodies we NOTE: Values below detection limit were t NOTE: Multiple values at a single station NOTE: Upper and lower quartiles estimated NOTE: NSD indicates insufficient data for

re analyz ed sepa rately. reated as 1/2 de tection limit.

were ave raged.

from upp er and lower f ourths (Ho lin, Mostell r, Tukey 19 83)

calculat ion

 $s\_w/jrm/pasco/xls/enterpriseCIII.surficial.xls$ 

6/25/01