



Facility Registry Service (FRS)

New FRS Geospatial Structures

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REVISION HISTORY

Version Number	Date	Description of Changes
1.0	04/08/2013	Initial creation.

A. NEW FRS GEOSPATIAL STRUCTURES/MODIFICATIONS

A.1 NEW FRS GEOSPATIAL STRUCTURES/MODIFICATIONS

1. All new map tables will be served from a single data schema instead of two as they are now. On the Intranet (database instance enviroi on the envirodb server), this will be the d_iltsp schema. On the Internet (database instance enviro on the envirodb server), this will be the d_lrtsp schema. LRT reference tables have been copied from their respective d_ilt or d_lrt schemas.
2. New GEO_PGM_FACILITY_COORDINATE table – replaces the current d_ilt.lrt_loc_ref table. This is the table that stores all program source point coordinates. This table has an Oracle Spatial Index on the SHAPE column and can be used in spatial queries.
 - a) Name and address columns were removed.
 - b) Obsolete Preferred Flag and Mod Score columns were removed.
 - c) Latitude83, Longitude83 and Accuracy_Score columns were added.
 - d) Old LRT_LOC_REF_ID and GEOMETRY columns were renamed to OBJECTID and SHAPE to better interact with ESRI products.
 - e) Structure:

Column Name	Format	Nullable	Column Order
OBJECTID	NUMBER(12,0)	No	1
PGM_SYS_ACRNM	VARCHAR2(15 BYTE)	No	2
PGM_SYS_ID	VARCHAR2(30 BYTE)	No	3
SUB_ID	VARCHAR2(30 BYTE)	Yes	4
LATITUDE	NUMBER(9,6)	No	5
LONGITUDE	NUMBER(10,6)	No	6
LATITUDE83	NUMBER(9,6)	No	7
LONGITUDE83	NUMBER(10,6)	No	8
COLLECT_MTH_CODE	VARCHAR2(3 BYTE)	Yes	9
SCALE	NUMBER(10,0)	Yes	10
ACCURACY_VALUE	NUMBER(6,0)	Yes	11
COLLECTION_DATE	DATE	Yes	12
REF_POINT_CODE	VARCHAR2(3 BYTE)	Yes	13
HDATUM_CODE	VARCHAR2(3 BYTE)	Yes	14
SOURCE_CODE	VARCHAR2(3 BYTE)	Yes	15
VMETHOD_CODE	VARCHAR2(3 BYTE)	Yes	16
VDATUM_CODE	VARCHAR2(3 BYTE)	Yes	17

Column Name	Format	Nullable	Column Order
VACCURACY	NUMBER(7,0)	Yes	18
VERTICAL_MEASURE	NUMBER(10,0)	Yes	19
GEOMETRIC_TYPE_CODE	VARCHAR2(3 BYTE)	Yes	20
SUB_TYPE_CODE	VARCHAR2(4 BYTE)	Yes	21
SOURCE	VARCHAR2(30 BYTE)	Yes	22
COMMENT_TEXT	VARCHAR2(150 BYTE)	Yes	23
SHAPE	SDO_GEOMETRY	Yes	24
COMPLIANT_FLAG	VARCHAR2(1 BYTE)	Yes	25
ACCURACY_SCORE	NUMBER(17,0)	Yes	26
CONVEYOR	VARCHAR2(25 BYTE)	No	27
USER_ID	VARCHAR2(15 BYTE)	No	28
TIMESTAMP	DATE	No	29
SUP_ENTITY_DESC	VARCHAR2(200 BYTE)	Yes	30

3. New GEO_FACILITY_POINT table (Facility Representative Point) replaces old LRT_BEST_COORDINATE table. In general, the columns in this table were normalized to not duplicate data that was stored in other tables. This table has an Oracle Spatial index on the SHAPE column and can be used in spatial queries.
 - a. Facility name and address columns removed.
 - b. Spatially derived columns removed.
 - c. Old LRT LOC REF columns removed.
 - d. Timestamp added to identify when new representative point was identified.
 - e. Key and spatial geometry columns were renamed to better interact with ESRI products.
 - f. Structure:

Column Name	Format	Nullable	Column Order
OBJECTID	NUMBER(12,0)	No	2
SHAPE	SDO_GEOMETRY	No	3
LATITUDE83	NUMBER(9,6)	No	4
LONGITUDE83	NUMBER(10,6)	No	5
TIMESTAMP	DATE	No	6
REGISTRY_ID	VARCHAR2(12 BYTE)	No	1

4. New MV_GEO_FACILITY_POINT table. Contains Facility Name and Address, Representative Facility Point Spatial data along with Spatial Metadata code descriptions, and Spatially Derived data. Its purpose is to be a central location for key facility level spatial information. This

materialized view has an Oracle Spatial index on the SHAPE column and can be used in spatial queries. Structure:

Column Name	Format	Nullable	Column Order
REGISTRY_ID	VARCHAR2(12 BYTE)	No	1
PRIMARY_NAME	VARCHAR2(80 BYTE)	Yes	2
LOCATION_ADDRESS	VARCHAR2(50 BYTE)	Yes	3
CITY_NAME	VARCHAR2(60 BYTE)	Yes	4
COUNTY_NAME	VARCHAR2(35 BYTE)	Yes	5
STATE_CODE	VARCHAR2(2 BYTE)	Yes	6
POSTAL_CODE	VARCHAR2(14 BYTE)	Yes	7
FIPS_CODE	VARCHAR2(5 BYTE)	Yes	8
COUNTRY_NAME	VARCHAR2(44 BYTE)	Yes	9
OBJECTID	NUMBER(12,0)	No	10
PGM_SYS_ACRNM	VARCHAR2(15 BYTE)	No	11
PGM_SYS_ID	VARCHAR2(30 BYTE)	No	12
LATITUDE83	NUMBER(9,6)	No	13
LONGITUDE83	NUMBER(10,6)	No	14
SHAPE	SDO_GEOMETRY	Yes	15
CONVEYOR	VARCHAR2(25 BYTE)	No	16
HDATUM_DESC	CHAR(5 BYTE)	Yes	17
COLLECT_DESC	VARCHAR2(250 BYTE)	Yes	18
REF_POINT_DESC	VARCHAR2(250 BYTE)	Yes	19
SOURCE_DESC	VARCHAR2(35 BYTE)	Yes	20
VERTICAL_MEASURE	NUMBER(10,0)	Yes	21
SCALE	NUMBER(10,0)	Yes	22
ACCURACY_VALUE	NUMBER(6,0)	Yes	23
ACCURACY_SCORE	NUMBER(17,0)	Yes	24
DERIVED_CITY	VARCHAR2(50 BYTE)	Yes	25
DERIVED_COUNTY	VARCHAR2(50 BYTE)	Yes	26
DERIVED_ZIP	VARCHAR2(5 BYTE)	Yes	27
DERIVED_STATE	VARCHAR2(2 BYTE)	Yes	28
DERIVED_FIPS	VARCHAR2(5 BYTE)	Yes	29
DERIVED_HUC	VARCHAR2(8 BYTE)	Yes	30
DERIVED_WBD	VARCHAR2(12 BYTE)	Yes	31

Column Name	Format	Nullable	Column Order
DERIVED_CB_2010	VARCHAR2(15 BYTE)	Yes	32
DERIVED_CD_112	VARCHAR2(2 BYTE)	Yes	33
OZONE_8HR_1997_AREA_NAME	VARCHAR2(150 BYTE)	Yes	34
PB_2008_AREA_NAME	VARCHAR2(150 BYTE)	Yes	35
PM25_1997_AREA_NAME	VARCHAR2(150 BYTE)	Yes	36
PM25_2006_AREA_NAME	VARCHAR2(150 BYTE)	Yes	37
OZONE_8HR_2008_AREA_NAME	VARCHAR2(150 BYTE)	Yes	38

5. View V_GEO_PGM_COORDINATE_ALL. Contains all Program Coordinate spatial data, associated Program Facility Name and Address information, expanded spatial metadata code values, all spatially derived data for the Program Coordinate, and the FRS Facility representative point information. The columns beginning with "REP" come from the GEO_FACILITY_POINT table and represented the FRS Facility representative point location. Structure:

Column Name	Format	Nullable	Column Order
PGM_SYS_ID	VARCHAR2(30)	No	1
PGM_SYS_ACRNM	VARCHAR2(20)	No	2
PRIMARY_NAME	VARCHAR2(80)	Yes	3
LOCATION_ADDRESS	VARCHAR2(50)	Yes	4
CITY_NAME	VARCHAR2(60)	Yes	5
COUNTY_NAME	VARCHAR2(35)	Yes	6
STATE_CODE	VARCHAR2(2)	Yes	7
POSTAL_CODE	VARCHAR2(14)	Yes	8
FIPS_CODE	VARCHAR2(5)	Yes	9
COUNTRY_NAME	VARCHAR2(44)	Yes	10
OBJECTID	NUMBER(12)	No	11
SUB_ID	VARCHAR2(30)	Yes	12
LATITUDE83	NUMBER(9,6)	No	13
LONGITUDE83	NUMBER(10,6)	No	14
SHAPE	SDO_GEOMETRY()	Yes	15
CONVEYOR	VARCHAR2(25)	No	16
HDATUM_DESC	CHAR(5)	Yes	17
COLLECT_DESC	VARCHAR2(250)	Yes	18
REF_POINT_DESC	VARCHAR2(250)	Yes	19

Column Name	Format	Nullable	Column Order
SOURCE_DESC	VARCHAR2(35)	Yes	20
SCALE	NUMBER(10)	Yes	21
ACCURACY_VALUE	NUMBER(6)	Yes	22
ACCURACY_SCORE	NUMBER(17)	Yes	23
TIMESTAMP	DATE	No	24
DERIVED_CITY	VARCHAR2(50)	Yes	25
DERIVED_COUNTY	VARCHAR2(50)	Yes	26
DERIVED_ZIP	VARCHAR2(5)	Yes	27
DERIVED_STATE	VARCHAR2(2)	Yes	28
DERIVED_FIPS	VARCHAR2(5)	Yes	29
DERIVED_HUC	VARCHAR2(8)	Yes	30
DERIVED_WBD	VARCHAR2(12)	Yes	31
DERIVED_CB_2010	VARCHAR2(15)	Yes	32
DERIVED_CD_112	VARCHAR2(2)	Yes	33
OZONE_8HR_1997_AREA_NAME	VARCHAR2(150)	Yes	34
PB_2008_AREA_NAME	VARCHAR2(150)	Yes	35
PM25_1997_AREA_NAME	VARCHAR2(150)	Yes	36
PM25_2006_AREA_NAME	VARCHAR2(150)	Yes	37
OZONE_8HR_2008_AREA_NAME	VARCHAR2(150)	Yes	38
REGISTRY_ID	VARCHAR2(12)	Yes	39
REP_LATITUDE83	NUMBER(9,6)	Yes	40
REP_LONGITUDE83	NUMBER(10,6)	Yes	41
REP_OBJECTID	NUMBER(12)	Yes	42
REP_TIMESTAMP	DATE	Yes	43

A.2 FUTURE DIRECTIONS

In the near term, the FRS project will be completing an address standardization project. Standardize address columns, which are derived from Oracle Spatial's geocoder and Navteq's North American Address Point data, may be added to these new structures. Additionally, structures have been designed to accommodate the limited facility polygonal spatial data that FRS has collected from EPA programs. Products addressing polygonal data are now being considered.