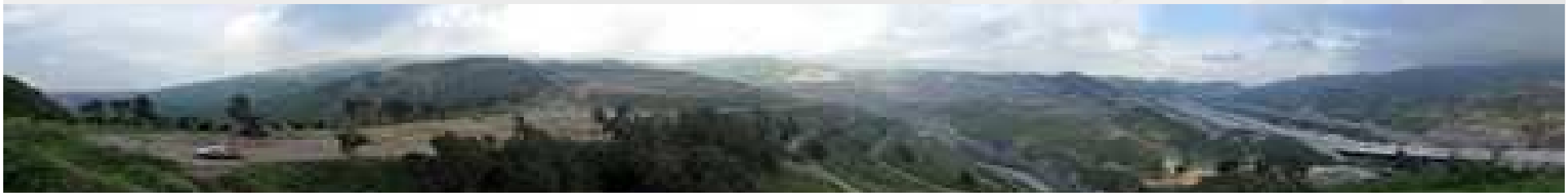
Sunshine Canyon Landfill

Presentation to the Los Angeles County Solid Waste Management Committee/ Integrated Waste Management Task Force

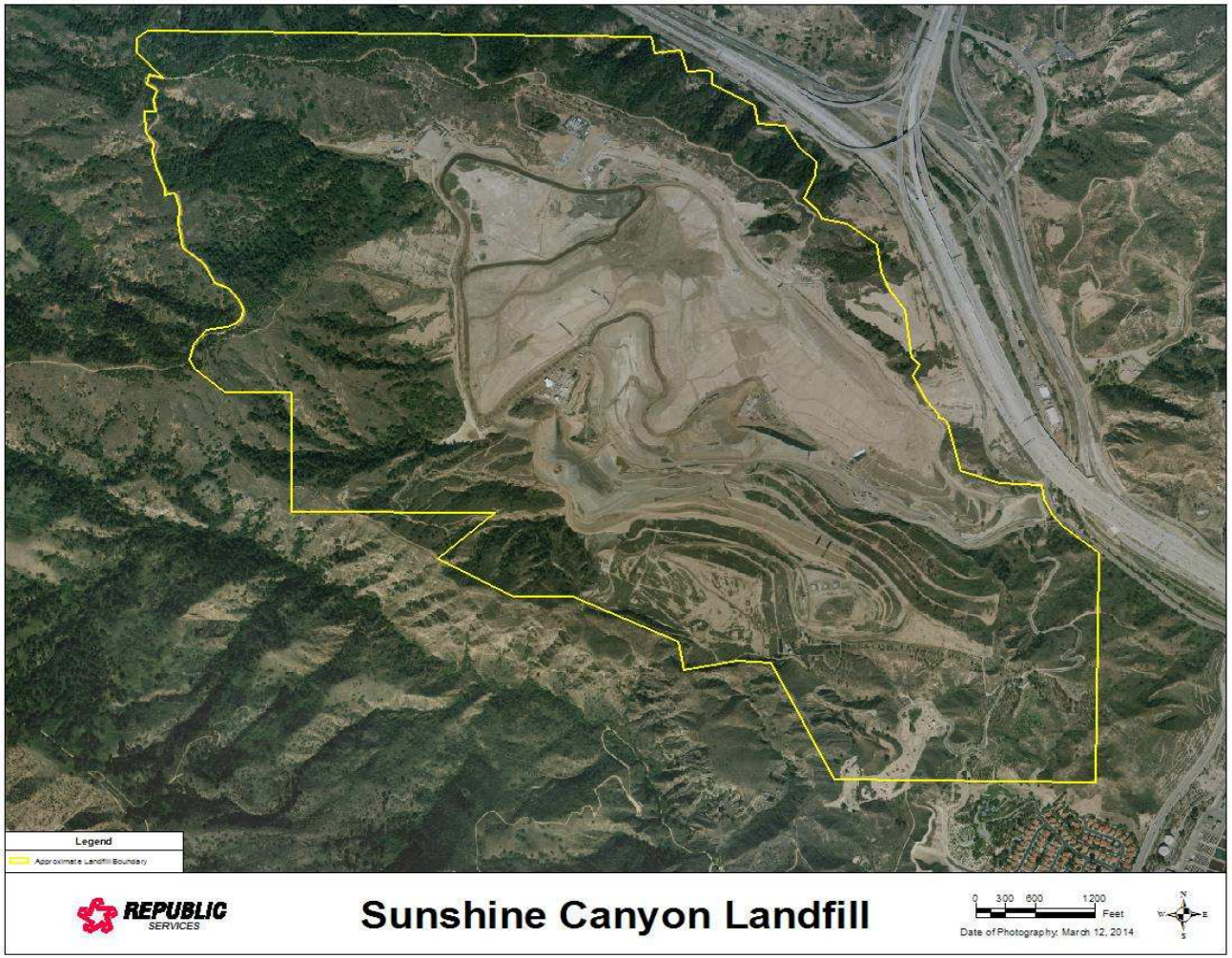
April 17, 2014



Presentation Topics

- Gas Collection and Control System (GCCS) Improvements
  - Results from Completed Improvements
  - On-Going GCCS Activities
- Gas-to-Energy Plant
- Leachate Collection
- Erosion and Sediment Control Measures
- La Habra March 28, 2014 Earthquake Assessment
- Odorous Load Process
- Vegetation Update

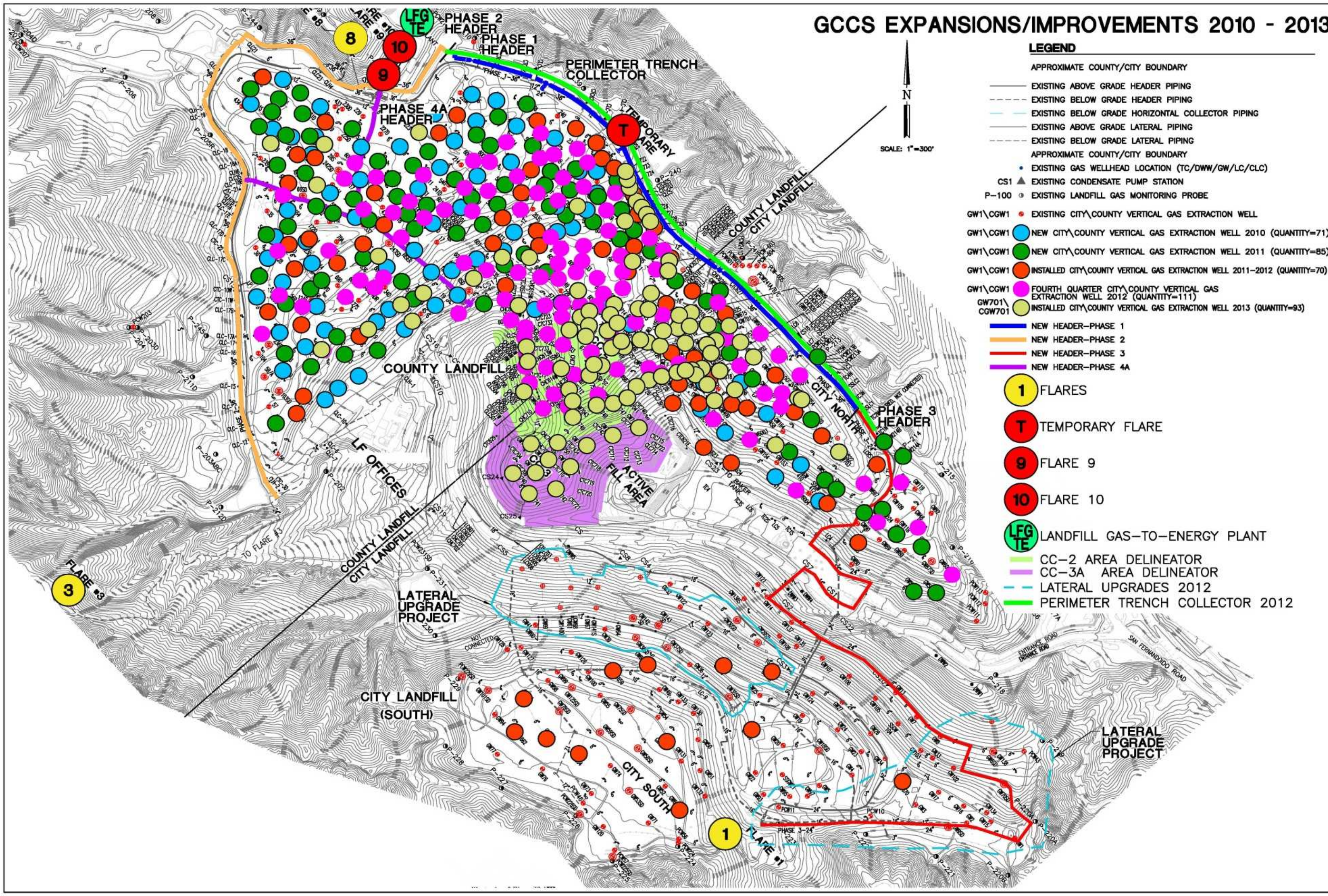
Sunshine Canyon Landfill



Gas Collection and Control System Improvements

- Vertical wells – currently 647 vertical gas extraction wells
- Upgrade “capillaries” (lateral pipes) sizes
- 36" and 24" perimeter header system in place
- 5 Flares
  - Flares 9 and 10 – 5,000 scfm capacity each
  - Flares 1, 3, 8 – 4,167 scfm permitted capacity each
- Blower upgrades at Flares 1, 3, 8 – 200 Hp blowers

GCCS EXPANSIONS/IMPROVEMENTS 2010 - 2013



NO	REVISIONS	DRN	CHK	DATE

DRN	FMR	02/2014
DES	FMR	02/2014
CHK		
APP		

BAS
BRYAN A. STIRRAT & ASSOCIATES
CONSULTING CIVIL & ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CALIFORNIA 91765
(909) 860-7777

REPUBLIC SERVICES, INC.
WASTE COLLECTION • RECYCLING • TRANSFER • DISPOSAL

SYLMAR, CALIFORNIA
SUNSHINE CANYON LANDFILL

GCCS EXPANSIONS/
IMPROVEMENTS 2010 - 2013

DATE
OCTOBER 2012
PROJECT NO
2011.0023
FILENAME
SHEET NO
DRAWING NO
FIGURE 16

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Results from Completed Improvements

REPUBLIC SERVICES

Significant improvements in gas collection efficiency

- ✓ **Flare Production**
  - September 2011 – 8,200 SCFM
  - Today - 14,000 SCFM
  - Increase of 70%
- ✓ **Surface Emissions**
  - September 2011 – 254 points over 200 PPM
  - Today – 35 points over 200 PPM
  - Decrease of 86%

On-Going GCCS Activities

- **Minimum of twice per month well field tuning**
- **Aggressive gas well pumping program to remove liquids**
  - Hindered by on-going requirement for 9” of daily soil cover with no removal
  - Needed to maintain effectiveness of wells
- **Inspection of well integrity using down-hole camera**
- **Installation of additional wells as deemed necessary through evaluation of wellfield, surface emission monitoring data, camera inspections**
  - 20 wells installed since January 2014
  - Additional 40 - 50 wells planned but number will be adjusted based on continued well field evaluations

Gas – to –Energy Plant

- 20 MW facility
- 5 turbines
- On-line August 2014

Leachate Collection

Leachate Collection and Recovery System (LCRS)

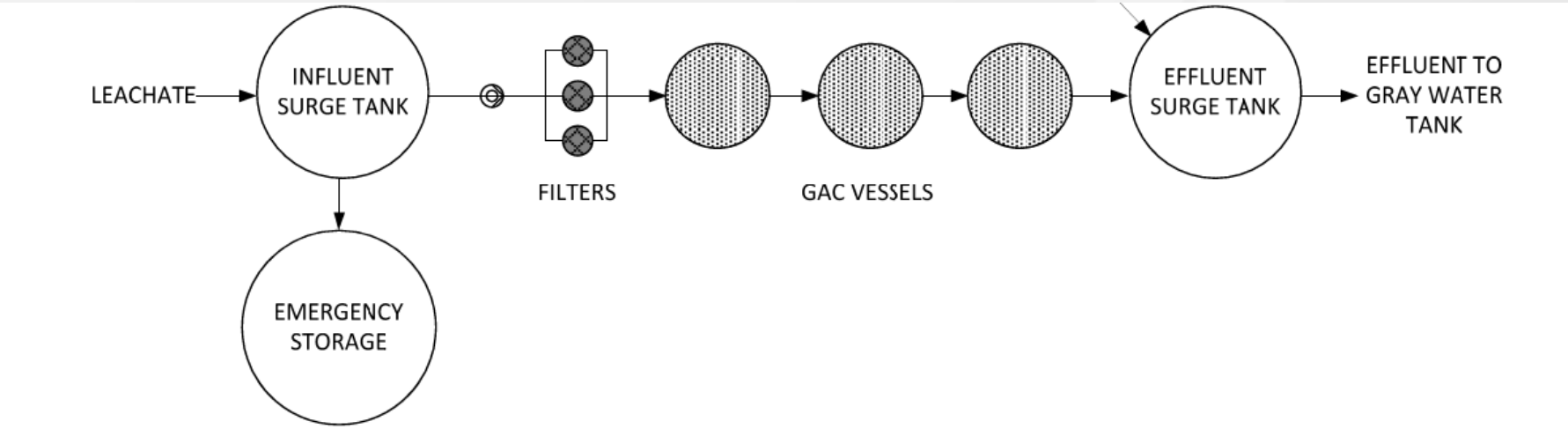
- Designed to collect and convey leachate to sumps
- Leachate in sumps pumped through solid HDPE pipeline to leachate treatment facility ~ 350,000 gallons/month
- Leachate pumped directly from gas wells – taken off-site for disposal ~ 400,000 gallons/month

Leachate Collection

Leachate Treatment Facility

- Granular activated carbon (GAC) system
  - 50,000 gpd design capacity
- Treated effluent gravity flows to a gray water tank and is then pumped to storage tanks where it is combined with treated seep water, subdrain water and cut-off wall water
- Treated liquid used for dust control as approved by LA Regional Water Quality Control Board

Leachate Treatment Facility



Erosion and Sediment Control Measures

Control measures are combination of permanent drainage features and temporary erosion control systems installed on annual basis in advance of rainy season:

- Existing Permanent features:
  - Perimeter drainage system
  - Designed to handle peak discharge from a 100-year, 24-hour storm
  - Sedimentation Basins A, B, D and Terminal Basin and East Drainage
  - West Drainage from Basin D to Basin A complete
    - Remainder of West Drainage planned for 2015

Erosion and Sediment Control Measures, con't

- Interim Interior Drainage System
  - Run-off managed in system of interim basins and channels that ultimately discharge to Terminal Basin
  - Construction projects include drainage component to ensure run-off is properly managed
- Temporary Erosion and Sediment Control Measures
  - Silt fencing
  - Sand bags
  - K-rails
  - Straw wattles
  - Temporary channels on slopes
  - Grading of benches to direct flow

Earthquake Assessment –
5.1 La Habra Earthquake March 28, 2014

Earthquake occurred on March 28, 2014 at 9:09 PM

Assessment conducted on Saturday, March 29, 2014

- No damage observed
- Notifications sent to Los Angeles Regional Water Quality Control Board, LEA and LA County DPW

Odorous Load Process

- Documented in Odor Plan of Action
- At Republic-operated transfer stations and SCL scalehouse
  - Identify odorous loads using SCAQMD's Odor Classification Table (following slide);
  - Notify appropriate SCL personnel
  - Loads identified as odorous immediately taken to working face and processed as soon as possible
  - Reject loads if there is a strong possibility it can cause an odorous situation at SCL

How Odorous Loads Identified

SCAQMD Odor Classification	Description
0. No Odor	No detectable odor.
1. Very Faint	An odor that would ordinarily not be noticed by the average person, but could detected by the experienced inspector or a very sensitive individual.
2. Faint	An odor so weak that the average person might detect it, if his or her attention were called to it, but that would not otherwise attract his or her attention.
3. Distinct	An odor of moderate intensity that would be readily detected and might be regarded with disfavor (a possible nuisance in inhabited areas).
4. Strong	An odor that would force itself upon the attention and that might make the air very unpleasant (a probable nuisance, if found in inhabited areas).
5. Very Strong	An odor of such intensity that the air would be absolutely unfit to breathe.

- SCAQMD's Odor Classification Table used to determine the load's odor intensity
- A "4" triggers the procedure

Vegetation Update

- Hydroseeding
  - 30 acres
- City Sage Mitigation Pilot Project
  - Random Quadrat Sampling method
  - Quarterly monitoring – results to be included in quarterly vegetation report
- Other activities
  - Soil samples collected from County Sage Mitigation slope area in March
  - Expecting soil report and growth trial results in June

Vegetation Update

Questions from Ms. Betsy Landis

Note: Responses will also be included in the quarterly vegetation report due April 30, 2014

1) What chemicals, such as nitrates and ammonia, are included in the trademarked fertilizer?

   Response: BioSol Forte® fertilizer: nitrogen (7%)-phosphate(2%)-potassium (1%)

2). What is the purpose of sodium used in the hydroseed mix?

   Response: There is no sodium in the mix. The ProPlus® Sodium-pHixTM is a refined natural gypsum mineral (calcium sulfate dehydrate) to provide calcium which will displace sodium salts at the soil colloid exchange sites in order to allow the sodium salts to be flushed from the root zone.

3). Is the fertilizer mix appropriate for growing the plant species included in the seed mix?

   Response: Yes. The organic fertilizer should be appropriate for most plantings.

Vegetation Update

4) What type of wood chips are in the mulch and will the mulch be heated to destroy fungal spores or bacteria that may be in it?

Response: Thermally-refined, recycled wood fibers from various tree species are used that have been processed under high temperature and pressure to phyto-sanitize the fibers. This process destroys all fungal spores and microbial life as well as eliminating all weed seeds.

5). Is the pH of the mulch appropriate for the plant species included in the seed mix?

Response: The pH of the mulch is 6.5 ± 0.5 and therefore close to neutral.

6). What are the chemical constituents of the fixative and green dye?

Response: The fixative and green dye are a proprietary formulation of naturally derived biopolymers, wetting agents, interlocking man-made fibers and mineral activators combine. The data sheet and MSDS will be included in the quarterly vegetation report to be submitted by April 30, 2014.

Vegetation Update

7). Will the fixative dissolve in high humidity or as a result of frequent rains, and will the green dye have any effect on seed germination?

Response: The fixative is designed to resist high humidity and frequent rains over a functional period of 6-12 month. The green dye has no effect on seed germination.

NOTE: Responses (excluding the response to Question #1) provided by a representative from the technical services of Profile Products LLC.