



## Copyright Disclosure

C Number:  
(TT use only)

C11064

**Instructions:** When completed, submit to the Technology Transfer Division, Copyright Team MS C333, Phone 5-6846, Fax 5-3125.

<b>1. Copyright Name :</b> [If software, list name (acronym, if applicable), version no. Ex: Electronic Chemical Database (ECD), Vers.1.0] PLUMECALC Vers. 2.3.2			
Is this a beta test version?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Version date:
<b>2. External Contributions</b>			
<input type="checkbox"/> (a) Incorporated copyrights: Code obtained from the Internet, canned copyright systems, etc. Attach a copy of the copyright notice(s) for each.			
Copyright name:		Copyright Owner:	How Obtained:
Copyright name:		Copyright Owner:	How Obtained:
<input type="checkbox"/> (b) Non-LANS/LANL authors (contractors, industrial partners, certain students). Attach individual's employment agreement.			
Name		Employer	Name Employer
<b>3. Documentation</b> Is there a user guide or installation instructions with "help" file?			
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Under development		If under development, estimated date of completion: <u>March 15, 2011</u>	
<b>4. Specifics</b> <input checked="" type="checkbox"/> Software <input type="checkbox"/> Firmware <input type="checkbox"/> Artwork <input type="checkbox"/> Schematics			
If software, provide:			
Computer Platform: <u>various</u>		Programming Language: <u>Fortran</u>	Operating System: <u>Windows, Linux</u>
<b>5. Funding</b>			
Copyright Development Program and B&R Codes	Fiscal year	FY2011	FY2005
	Program Code(s)	SAAI CODE 0000	MF03 WTRN AW00
	Corresponding B&R Code(s)		
Major funding source (DOE, DoD, etc.): <u>DOE</u> (ex. ASC, DHS, LDRD, NIH, OASCR)			
Did this invention result from some type of collaborative arrangement (CRADA, FIA, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, please list: Agreement Number:		Company Name:	
<b>6. Classification and Export Control Reviews (S-7)</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, date:			
Los Alamos Computer Code (LA-CC) Number:			
Export Control Classification Number (ECCN):			
<b>7. LANS/LANL Authors:</b> (Staff Member, Post doc, GRA, etc.) Note that the employee Z number and country of citizenship are required. If needed, attach list of additional authors listing the same information.			
(a) Printed Name	Position	Signature	Date
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(b) Printed Name	Position	Signature	Date
Home Address	Z Number	Division & Group	Country of Citizenship
<b>8. Abstract:</b> Attach a brief description of the software and its functionality, such that someone who is not familiar with the code can understand.			
<b>9. Commercial Potential</b>			
Does the software (or document) have commercial potential? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, attach explanation.			
<b>10. Certification</b>			
I certify that the information contained in this disclosure is accurate to the best of my knowledge. I understand that I will probably be requested to submit source code and documentation to TT in order for TT to fulfill the DOE order to submit all copyright asserted software to ESTSC.			
Copyright Steward (LANS/LANL employee responsible for managing the code)			
Printed Name	Z Number	Signature	Date
<u>Zora V. Dash</u>	<u>092638</u>	<u>Zora V. Dash</u>	<u>03/03/2011</u>
<b>Approval/Signature</b> (Steward's Line Manager or Group Leader)			
Printed Name and Title	Signature		Date
<u>Frank Perry, Acting Group Leader</u>	<u>Frank Perry</u>		<u>3/3/2011</u>

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## PLUMCALC Abstract

PLUMECALC is a post processor to random walk particle tracking simulations of subsurface solute transport. PLUMECALC takes results of a single particle tracking run without retention processes and incorporates the effects of matrix diffusion or other retention processes for a user-specified solute source.

B. Robinson, Z. Dash and G. Srinivasan. A particle tracking transport method for the simulation of resident and flux-averaged concentration of solute plumes in groundwater models. Computational Geosciences (18 May 2010)  
doi:10.1007/s10596-010-9190-6